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ABSTRACT

This course syllabus for a continuing education course for health science librarians introduces the MEDLARS system, the MEDLINE database, and the Index Medicus. Designed to enable health science librarians to discriminate between the capabilities of manual searching and online retrieval, an overview is given of the nature and scope of MEDLINE and the Index Medicus which emphasizes the indexing methodology and characteristics of the information in each source. It is noted that, although Index Medicus and MEDLINE are used as the examples for this course, the principles of online searching and the differences between print and online resources are readily transferable to other databases and printed counterparts. In addition, parallels are drawn between various search systems which offer the MEDLINE database, and other biomedical databases offered by the National Library of Medicine are discussed. The text is supplemented by four figures, and seven supporting appendices are provided. (Author/EW)

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MEDICAL LIBRARY ASSOCIATION
COURSES FOR CONTINUING EDUCATION

MEDLINE AND INDEX MEDICUS FOR THE HEALTH SCIENCE LIBRARIAN

J. MICHAEL HOMAN
CORPORATE TECHNICAL LIBRARY
THE UPJOHN COMPANY
KALAMAZOO, MICHIGAN

AND

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This syllabus has been developed by the Medical Library Association especially for the Fifth International Congress on Medical Librarianship, held in Tokyo, Japan October, 1985.

The syllabus is only one part of a complete instructional package. Other components of the package consist of a qualified instructor, an adequate instructional environment. supplementary classroom materials, and an evaluation of the instruction received. Continuing Education Units (CEUs) for this course may be granted only by the Medical Library Association.

This syllabus is an adaptation and revision of the syllabus "MEDLINE and the Health Science Librarian (CE 20)" prepared by the MEDLARS Management Section of the National Library of Medicine and revised by the Library's Online Services Training Unit; and, of "MEDLINE and Index Medicus for the Health Science Librarian" by J. Michael Homan and Lorraine Schulte, prepared for the Fourth International Congress on Medical Librarianship, "Health Information for a Developing World", held in Belgrade, Yugoslavia in September, 1980.

Course Description

An introduction to the MEDLARS system, the MEDLINE data base and the Index Medicus publication is provided. An overview of the nature and scope of MEDLINE and Index Medicus with emphasis on indexing methodology and characteristics of the information in each source is designed to enable the health science librarian to discriminate between the capabilities of online versus manual retrieval. Through a selection of typical search request problems, participants will learn the capabilities and limitations of MEDLINE and Index Medicus and learn which requests are best handled by the online MEDLINE system. Although Index Medicus and MEDLINE are used as the examples for this course, principles of online searching and the differences between print and online resources are readily transferrable to other databases and printed counterparts. Parallels will be drawn among various search systems which offer the MEDLINE database and other biomedical databases offered by the National Library of Medicine will be discussed.

Course Objectives

Upon completion of this course, participants will be able to:

1. Describe the versions of the printed MeSH and the scope, use and form of the MeSH vocabulary.

2. Describe the indexing process, including concepts of depth, IM NIM, and coordination.

3. Explain the use of subheadings as search delimiters.

4. Compare the content and coverage of MEDLINE and Index Medicus.

5. Interpret search strategy statements which have utilized Boolean logic (AND, OR, AND NOT) and positional connectors (ADJ, WITH, SAME).

6. Describe the circumstances under which an online search would be more efficient/effective than a manual search.

7. Select from among a group of search requests those topics which are best processed online.

8. Name and describe those request parameters which should be defined/clarified during the search interview.

9. Describe the advantages and limitations of the Index Medicus and the MEDLINE system.

10. Name several criteria to use in choosing an appropriate database to answer a biomedical information problem.

11. Discuss the decision points for choosing a retrieval system for the MEDLINE database.

INTRODUCTION

Index Medicus is a comprehensive index to international journal literature in the biomedical sciences. It is the major printed publication derived from MEDLINE, a major database in the U.S. National Library of Medicine interactive online search system as well as other national/international information retrieval systems. Many biomedical information problems can be solved by searching Index Medicus or its online equivalent, MEDLINE. By studying coverage, scope and indexing methodology, participants will learn how to make effective use of Index Medicus capabilities and to identify and anticipate its limitations.

MEDLINE (MEDlars-on-LINE) is the principle computer-based online bibliographic database of the U.S. National Library of Medicine MEDLARS (Medical Literature Analysis and Retrieval System). Other databases which form a part of MEDLARS may be of interest to the health science librarian and these will be discussed briefly. A complete list of these databases is provided as Appendix D.

As a computer searchable database, MEDLINE has capabilities and advantages beyond those of Index Medicus and these will be enumerated and compared. The search request interview and search strategy, important to successful utilization of either resource, are also reviewed. Parallels are drawn to other major biomedical databases, printed counterparts and search systems.

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I. CHARACTERISTICS OF INDEX MEDICUS AND MEDLINE

I. Characteristics of Index Medicus and MEDLINE

A. SYSTEM OVERVIEW: MEDLARS

MEDLARS (Medical Literature Analysis and Retrieval System) is a computerized system for publication and for literature search purposes based at the U.S. National Library of Medicine (NLM) in Bethesda, Maryland. MEDLARS provides access to over 4,000,000 references (or citations) to journal articles, books, technical reports, and audiovisuals in the health sciences. Many of these references have appeared in a variety of publications issued by NLM including the following: Index Medicus, Index to Dental Literature, Hospital Literature Index, Current Catalog, etc. MEDLARS databases can be searched from computer terminals via telecommunication systems and result in lists of references on specific search request topics. These references are retrieved by the computer through searcher coordination of appropriate search terms, such as indexer assigned subject headings, author, languages, and words from the title and abstract.

The major printed product of the MEDLARS system is the publication, Index Medicus, one of the world's major indexes to the published biomedical literature. The database to which Index Medicus is directly related and from which the publication is generated is MEDLINE.

MEDLINE (MEDLARS On-Line) and related files (MEDLINE BACKFILES TO 1966, SDILINE) are composed of over 4,000,000 references to the biomedical literature published from 1966 to the present. The references are from over 3,000 journals published in the U.S. and 70 foreign countries. Between May 1976, and 1982 chapters and articles from selected congresses, symposia, proceedings and multi-authored monographs were

indexed. Author Abstracts, if published with the article, have been included in the database for selected journals since 1975.

B. Overview of Index Medicus

Index Medicus Washington, D.C., U.S. Government Printing Office. Issued monthly with an annual cumulation sold separately.

Index Medicus contains citations to the journal literature and to selected monographs (1976 - 1982).

In selecting the journals indexed, the National Library of Medicine is advised by physicians, medical editors, and medical librarians. The Library indexes literature that has been judged most useful to Index Medicus users. It is not possible to include every journal that might contain useful articles and more journals are recommeded for inclusion than can be actually indexed.

When the issue of a journal to be indexed is received at the National Library of Medicine, it is sent to the Indexing Section. There a trained specialist assigns the appropriate subject headings using MeSH (Medical Subject Headings), the controlled vocabulary/thesaurus used for indexing and cataloging at the U.S. National Library of Medicine. The most specific terms available in MeSH are used. Most references will appear printed in Index Medicus 1 to 4 months after publication.

Monthly issues of Index Medicus are arranged in three section: Bibliography of Medical Reviews Subject Section; Index Medicus Subject Section and Index Medicus Author Section. A complete key to journal title

abbreviations used in Index Medicus is included in the January issue and available separately from the U.S. Government Printing Office.* Two complete journal listings are provided: an alphabetical listing by journal title abbreviation followed by the full title of the journal; and, an alphabetical listing by full title of the journal followed by the journal title abbreviation. In the separately published journal list, additional lists are provided, such as the journal titles arranged by subjects, by country of origin and for a given specialty area (e.g., nursing, reproduction journals).

Each article indexed in Index Medicus is cited in full under the several subject headings that represent the most important concepts or main points of the article. Each citation in the subject section (see Figure 1) contains the following elements: original English title of article or English translation of title (these titles are bracketed), senior author (if more than one) or sole author, abbreviated journal title, date of issue, volume number, part or issue or supplement, inclusive pagination, and an abbreviation indicating the language of the article if other than English. If the article is in a foreign language and there is an English abstract, (Eng. Abstr.) appears at the end of the citation. Under each subject heading the articles are grouped alphabetically by subheading and then further divided by language (English first; all others alphabetically). Finally, within languages, the citations are arranged, again alphabetically, by journal title abbreviation.

In the author section, all authors (NB: Since 1984 indexing has been limited to the first ten authors) are included with cross references from joint authors to the entry for the senior author. The title of the article in this section appears in the original language, as a transliteration (Russian; Hebrew) or as a translation (Japanese; Korean; Chinese). People who have been written about (biography; obituary) appear in parentheses as the subject of the article with the author(s) of the article listed second.

*See Appendix A

Figure 1

Index Medicus

HEART DISEASE, ISCHEMIC see CORONARY DISEASE

HEART DISEASES

see related
NEUROCIRCULATORY ASTHENIA

Symposium on pediatric cardiology.
Pediatr Clin North Am 1984 Dec;31(6):1157-388

Recreational and sports recommendations for the child with heart disease. Freed MD. Pediatr Clin North Am 1984 Dec; 31(6):1307-20

BLOOD

[Clinical usefulness of the measurement of plasma platelet release factors in surgical patients with cardiovascular diseases] Kawada T, et al. Rinsho Kyobu Geka 1984 Jul; 4(4):455-62 (Eng. Abstr.) (Jpn)

CHEMICALLY INDUCED

[Cardiotoxicity of anthracyclines] Laurent S, et al.
Ann Med Interne (Paris) 1984;135(6):464-72 (98 ref.) (Eng. Abstr.) (Fre)

COMPLICATIONS

Sudden cardiac death. Hicks D. J Arkansas Med Soc 1984 Oct;81(5):269-73

Heart in ischemic stroke--a changing emphasis. Barnett HJ. Neurol Clin 1983 Feb;1(1):291-315

Cardiac abnormalities in ischemic cerebrovascular disease [letter] Starkey IR. Stroke 1984 Nov-Dec;15(6):1081-2

DIAGNOSIS

Two-dimensional echocardiography for detection of primary right atrial thrombus in pulmonary embolism. Lim SP, et al. Am Heart J 1984 Dec;108(6):1546-7

Echocardiographic diagnosis of mobile right atrial thrombus: early recognition and treatment. Quinn TJ, et al.
Am Heart J 1984 Dec;108(6):1548-50

Echocardiographic diagnosis of cardiac embolus. Davis MJ, et al. Int J Cardiol 1984 Nov;6(5):629-32

Two-dimensional echocardiographic detection of right-sided cardiac intracavitary thromboembolus with pulmonary embolism. Saner HE, et al. J Am Coll Cardiol 1984 Dec; 4(6):1294-301

Cardiologic perspectives of chest pain in childhood: a referral problem? To whom? Brenner JI, et al.
Pediatr Clin North Am 1984 Dec;31(6):1241-58 (56 ref.)

ECG-gated NMR-CT for cardiovascular disease. Nishikawa J, et al. Radiat Med 1983 Oct-Dec;1(4):274-80

[Uni- and bidimensional echocardiography in the etiologic diagnosis of precordial pain] Aubran M, et al.
Ann Cardiol Angeiol (Paris) 1984 Nov;33(7):429-33 (Eng. Abstr.) (Fre)

[Echocardiographic findings in dystrophia myotonica (Steinert's disease)] Sonaglioni G, et al. G Ital Cardiol 1984 Aug;14(8):551-6 (Eng. Abstr.) (Ita)

[Early diagnosis of cardiac disorders in coal miners] Ignatova OA, et al. Vrach Delo 1984 Aug;(8):105-7 (Eng. Abstr.) (Rus)

DRUG THERAPY

Long-term antiarrhythmic therapy. Problem of low drug levels and patient noncompliance. Squire A, et al.
Am J Med 1984 Dec;77(6):1035-8

Effect of nitroprusside on wave reflections in patients with heart failure. Brin KP, et al. Ann Biomed Eng 1984; 12(2):135-50

[Acute right ventricular failure. Treatment with dobutamine] Jardin F, et al. Presse Med 1984 Nov 24;13(42):2563-6 (Eng. Abstr.) (Fre)

Lauer K, Firnhaber W, Reining R, Leuchtweis B. Epidemiological investigations into multiple sclerosis in southern Hesse. I. Methodological problems and basic epidemiologic characteristics. Acta Neurol Scand 1984 Oct; 70(4):257-65

Lauer K, Firnhaber W. Epidemiological investigations into multiple sclerosis in southern Hesse. II. The distribution of cases in relation to exogenous features.
Acta Neurol Scand 1984 Oct;70(4):266-73

Lauer O, Langhammer HR, Bauer R. Alters- und Geschlechtsabhängigkeit der tubulären Nierenclearance im Kindesalter. Fortschr Med 1984 Oct 25;102(40):1013-6 (Eng. Abstr.) (Ger)

Laufer H see Tinker MA

Laufer J, Altman G, Boichis H, Bogokawsky B, Frand M. Campylobacter enteritis among immunocompromised patients [letter] J Infect 1984 Jul;9(1):102-3

Laufer N see Hodgson JM

Laufer N see Wilber D

Laufer R, Wormser U, Selinger Z, Chorev M, Gilon C. Ion-exchange chromatographic assay of peptidases acting on the C-terminal hexapeptide sequence of substance P. J Chromatogr 1984 Oct 5;301(2):415-24

Laufman L see McCaughan JS Jr

Laufs A. Arztethik aus der Sicht des Juristen.
Lebensversicherungsmedizin 1984 Oct 5;36(8):169-70 (Ger)

Laughman RK, Askew LJ, Bleimeyer RR, Chao EY. Objective clinical evaluation of function. Gait analysis. Phys Ther 1984 Dec;64(12):1839-45

Laughrey E see Rodriguez-Nichols F

Lauharanta J see Kanerva L

Lauko L. Kvantifikácia PAS pozitívnych látok v pečeňových bunkách novorodencov postnatálneho obdobia.
Bratisl Lek Listy 1984 Oct;82(4):1190-204 (Eng. Abstr.) (Slo)

Launois B see Lorcy Y

Laur J see Martinez J

Laurberg G, Christiansen JV. Purpuric allergic contact dermatitis to epoxy resin. Contact Dermatitis 1984 Sep; 11(3):186-7

Laurberg P see Boye N

Laurence KM see Wyvill PC

Laurensse E see Peters GJ

Laurent AG, Krust B, Svab J, Hovanessian AG. Characterisation of the interferon-mediated protein kinase by polyclonal antibodies.
Biochem Biophys Res Commun 1984 Nov 30;125(1):1-7

Laurent B, Michel D, Antoine JC, Montagnon D. Migraine basilaire avec alexie sans agraphie: spasme artériel a l'artériographie et effet de la naloxone.
Rev Neurol (Paris) 1984;140(11):663-5 (Eng. Abstr.) (Fre)

Laurent B see Bertboux FC

Laurent D see Geschwind H

Laurent D see Geschwind HJ

Laurent G see Porter GA

Laurent J see Sainte-Laudy J

Laurent JC see Verhaeghe M

Laurent M, Pays E, Van der Werf A, Aerts D, Magnus E, Van Meirvenne N, Steinert M. Translocation alters the activation rate of a trypanosome surface antigen gene.
Nucleic Acids Res 1984 Nov 26;12(22):8319-28

Laurent S, Colbert N, Israel V, Motte G. La cardiotoxicité des anthracyclines. Ann Med Interne (Paris) 1984; 135(6):464-72 (98 ref.) (Eng. Abstr.) (Fre)

Laurent TC see Smedsrød B

Laurenti P see Castello MA

Laurentjoye P see Gibaud M

Lauria F, Fiacchini M, Gherlinzoni F, Mazza P, Tiles JM, Barbieri E, Emiliani E, Tura S. Spinal cord compression in Hodgkin's disease. Haematologica (Pavia) 1984 Jul-Aug; 69(4):442-8

Lauria F, Foà R, Matera L, Raspadori D, Tura S. Membrane

C. MEDLINE OVERVIEW

The computer searchable MEDLINE database is used to print Index Medicus and thus contains the same information plus the following additional subject coverage:

-World coverage of the dental literature, only part of which is printed in Index Medicus. MEDLINE's additional dental literature coverage including that portion which is part of Index Medicus is issued as a separate publication, the Index to Dental Literature.

-World coverage of the nursing literature, only part of which is published in Index Medicus. MEDLINE's additional nursing literature coverage including that portion which appears in Index Medicus is issued as a separate publication, the International Nursing Index.

D. JOURNALS INDEXED FOR MEDLINE AND Index Medicus

1. Coverage

Although over 20,000 journals are currently received at NLM, less than 3,000 of these are indexed in Index Medicus. These Index Medicus journals and about eight hundred additional "special list" titles (e.g., dentistry, nursing) are retrievable in MEDLINE and the backfiles.

2. LIST OF JOURNALS INDEXED IN Index Medicus (LJI)

This is precisely what the title says. It is published separately each year but also appears in the January issue of the monthly - Index Medicus (with monthly updates) and in the first volume of the Cumulated Index Medicus.

LJI is needed for identifying the full title of journal abbreviations in Index Medicus and MEDLINE citations. The International Standard Serial Number (ISSN) is also given for most titles.

Selection of journals for inclusion is based on the recommendations of a group of consultants on Literature Selection for MEDLARS.

Sample from LJI:

ITALIAN JOURNAL OF ORTHOPAEDICS AND TRAUMATOLOGY (BOLOGNA)
Ital J Orthop Traumatol
ISSN 0390-5489
W1 IT136 I41100000

ITALIAN JOURNAL OF SURGICAL SCIENCES (MILANO)
Ital J Surg Sci
ISSN 0392-3525
CONTINUES: SURGERY IN ITALY.
W1 IT36P I41137000

JAPANESE JOURNAL OF ANTIBIOTICS (TOKYO)
Jpn J Antibiot
ISSN 0368-2781
CONTINUES JOURNAL OF ANTIBIOTICS. SERIES B
W1 JA95N J04120000

JAPANESE JOURNAL OF BACTERIOLOGY see NIPPON SAIKINGAKU ZASSHI. JAPANESE JOURNAL OF BACTERIOLOGY (TOKYO)

JAPANESE JOURNAL OF CANCER AND CHEMOTHERAPY see GAN TO KAGAKU RYOHO (TOKYO)

3. LIST OF SERIALS INDEXED FOR ONLINE USERS

This is a publication which began in 1980 and which is designed to provide unified access to information on all titles indexed for MEDLINE, the Health Planning and Administration database, and POPLINE (a data base on population science and reproductive medicine). The "Special List" journals, those journals indexed especially for the Index to Dental Literature, International Nursing Index and other recurring publications produced by MEDLINE are contained in this publication. These "Special List" journals are covered in MEDLINE but do not appear in Index Medicus.

E. DEPTH OF INDEXING

The number of terms assigned to an article (depth of indexing) to provide access points for searching the printed index as well as the computer data base is determined by the priority rating that the journal received from a panel of physicians, scientists and librarians. The panel evaluates new journals and reevaluates currently indexed journals to determine if a journal is priority 1, 2 or 3.

1. Journal Priority

Priority 1 - Depth Indexing - all aspects of the article are indexed - RUSH

Priority 2 - Depth Indexing - all aspects of the article are indexed - NON-RUSH

Priority 3 - Non-depth Indexing - only the main point(s) of the article is indexed - NON-RUSH

NOTE: Indexers are free to judge each article on its own merits and to index the occasional article from a priority 1 or 2 journal as non-depth, and the especially meritorious article from a priority 3 journal in great depth. All review articles are indexed in depth regardless of the journal.

2. Selective Indexing

Selectively indexed: Some journals in the LJI are not exclusively medical (e.g., SCIENCE, NATURE, EXPERIENTIA). The articles in those journals indicated as selectively indexed in any priority are indexed

with the proper number of terms but only if they are medical, biological or physiological in scope.

Figure 2 represents the MEDLINE printout of a depth article; Figure 3 appears on an NLM indexing data form showing how the article was indexed; and, Figure 4 illustrates a data form for this article had it been indexed from a priority 3 (non-depth) journal.

Figure 2 also illustrates the most important elements retrievable in a MEDLINE citation. The asterisked (*) headings are those which represent the MAJOR POINTS OF THE ARTICLE and will appear in the printed Index Medicus or other MEDLARS derived publications, e.g., International Nursing Index. Those headings without an asterisk represent additional concepts discussed in the article.

The headings without an asterisk are stored as part of the computerized bibliographic record, but the citation never appears under one of these headings in any of the MEDLARS derived publications.

COMMENT	CITATION
	AU - RAINSFORD KD
	TI - THE ROLE OF ASPIRIN IN GASTRIC ULCERATION. SOME FACTORS INVOLVED IN THE DEVELOPMENT OF GASTRIC MUCOSAL DAMAGE INDUCED BY ASPIRIN IN RATS EXPOSED TO VARIOUS STRESS CONDITIONS.
Language	LA - ENG
	MH - ANIMAL
	MH - ARTHRITIS, ADJUVANT/COMPLICATIONS/PATHOLOGY
Main Point	MH - ASPIRIN/*ADVERSE EFFECTS/PHARMACODYNAMICS
	MH - ATROPINE DERIVATIVES/PHARMACODYNAMICS
	MH - BETHANECHOL COMPOUNDS/PHARMACODYNAMICS
	MH - COLD
	MH - FEMALE
Main Point	MH - GASTRIC MUCOSA/*DRUG EFFECTS/PATHOLOGY
	MH - HINDLIMB
	MH - INFLAMMATION/COMPLICATIONS/PATHOLOGY
Sex Indication	MH - MALE
	MH - METHAMPHETAMINE/PHARMACODYNAMICS
	MH - PAIN
	MH - PHENTOLAMINE/PHARMACODYNAMICS
	MH - PROPRANOLOL/PHARMACODYNAMICS
	MH - PROSTAGLANDINS E/PHARMACODYNAMICS
Experimental Animal	MH - RATS
	MH - STOMACH ULCER/*CHEMICALLY INDUCED/ETIOLOGY
	MH - STRESS/COMPLICATIONS/*PATHOLOGY
	MH - VAGOTOMY
	CI - 0002-9211 23:521 78
Journal Source	SO - AM J DIG DIS 23(6):521-30, Jun 78

Figure 2: Sample Reference from MEDLINE database

FIGURE 3

INDEXING DATA FORM - - DEPTH INDEXING

(1)	(8) PAGINATION	(9) LANGUAGE	ANONYMOUS	(17) REFS	(15) SUBJECT NAME
C	521-30	ENG. X — —	A ☐		

(19) AUTHOR DATA

(12) TITLE (Eng or Transl)

This is an indexing data form prepared by an indexer for the article retrieved in Figure 2. It shows the headings for depth indexing, as it was indexed.

(14) TITLE (Vernac or Translit)

(19)	(20)				(13) AUTHOR
A ☐ HIST ART	A ☐ PREGN	J ☐ CATS	V ☐ HUMAN	f ☐ 15th CENT	☐ AFFIL
B ☐ HIST BIOG	B ☐ INF NEW (to 1 mo)	K ☐ CATTLE	W X MALE	g ☐ 16th CENT	
C ☐ BIOG OBIT	C ☐ INF (1-23 mo)	L ☐ CHICK EMBRYO	X X FEMALE	h ☐ 17th CENT	
G ☐ MONOGR	D ☐ CHILD PRE (2-5)	M ☐ DOGS	Y ☐ IN VITRO	i ☐ 18th CENT	(22) AUTHOR
H ☐ ENG ABST	E ☐ CHILD (6-12)	O ☐ GUINEA PIGS	Z ☐ CASE REPT	j ☐ 19th CENT	X ABST
	F ☐ ADOLESC (13-18)	P ☐ HAMSTERS	b ☐ COMP STUDY	k ☐ 20th CENT	
	G ☐ ADULT (19-44)	Q ☐ MICE	c ☐ ANCIENT	l ☐ NIH/PHS SUP	(24) NIH/PHS GRANT NO
	H ☐ MID AGE (45-64)	S ☐ RABBITS	d ☐ MEDIEVAL	m ☐ OTHER US GOVT SUP	
	I ☐ AGED (65 —)	T X RATS	e ☐ MODERN	n ☐ NON-US GOVT SUP	
		U X ANIMAL			

(21)

1 ARTHRITIS, ADJUVANT / compl / pathol
2
3 ASPIRIN / *adv eff / pharm
4
5 ATROPINE DERIVATIVES / pharm
6
7 BETHANECHOL COMPOUNDS / pharm
8
9 COLD
10
11 GASTRIC MUCOSA / *drug eff / pathol
12
13 HINDLIMB
14
15 INFLAMMATION / compl / pathol
16
17 METHAMPHETAMINE / pharm
18
19 PAIN
20
21 PHENTOLAMINE / pharm
22
23 PROPRANOLOL / pharm
24
25 PROSTAGLANDINS E / pharm
26
27 STOMACH ULCER / *chem ind / etiol
28
29 STRESS / compl / *pathol
30
31 VAGOTOMY

NIH-1416 Rev. 5-70 — INDEXED CITATION FORM

FIGURE 4

INDEXING DATA FORM - - NON-DEPTH INDEXING

(8) PAGINATION	(9) LANGUAGE	ANONYMOUS	(17) REFS	(13) SUBJECT NAME
521-30	ENG. X — —	A ☐		

(12) AUTHOR DATA

(15) TITLE (Eng or Transl)

This is an indexing data form prepared for the article shown in Figure 2 as if the article had been taken from a priority 3 journal -- non-depth indexing.

(14) TITLE (Vernac or Transl)

(19)	(20)				(11) AUTHOR
A ☐ HIST ART	A ☐ PREGN	J ☐ CATS	V ☐ HUMAN	f ☐ 15th CENT	☐ AFFIL
B ☐ HIST SIGG	B ☐ INF NEW (to 1 mo)	K ☐ CATTLE	W X MALE	g ☐ 16th CENT	
C ☐ BIOG OBIT	C ☐ INF (1-23 mo)	L ☐ CHICK EMBRYO	X X FEMALE	h ☐ 17th CENT	
G ☐ MONOGR	D ☐ CHILD PRE (2-5)	M ☐ DOGS	Y ☐ IN VITRO	i ☐ 18th CENT	(22) AUTHOR
H ☐ ENG ABST	E ☐ CHILD (6-12)	O ☐ GUINEA PIGS	Z ☐ CASE REPT	j ☐ 19th CENT	X ABST
	F ☐ ADOLESC (13-18)	P ☐ HAMSTERS	b ☐ COMP STUDY	k ☐ 20th CENT	
	G ☐ ADULT (19-44)	Q ☐ MICE	c ☐ ANCIENT	l ☐ NIH PHS SUP	
	H ☐ MID AGE (45-64)	S ☐ RABBITS	d ☐ MED EVAL	m ☐ OTHER US GOVT SUP	(24) NIH/PHS GRANT NO
	I ☐ AGED (65 +)	T X RATS	e ☐ MODERN	n ☐ NON-US GOVT SUP	
		U X ANIMAL			

(21)

1 ASPIRIN / *adv eff / pharm

2

3 GASTRIC MUCOSA / *drug eff / pathol

4

5 STOMACH ULCER / *chem ind / etiol

6

7 STRESS / compl / *pathol

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NIH-1818
Rev. 5-80

INDEXED CITATION FORM

F. IM AND NIM SUBJECT HEADINGS

1. Definition of IM: "Index Medicus" - a subject heading assigned to an article and under which the citation will be printed in NLM's publications such as Index Medicus. Also called "print heading".

   NIM: "Non-Index Medicus" - a subject heading by which the citations can be retrieved from the computer file but under which the citation will not appear in NLM's publications. Also called "non-print heading".

2. Availability: Both IM and NIM entries are stored in the computer and are retrievable in MEDLINE.

3. Application: IM subject headings - those representing the main points of the article.

   NIM terms - those representing subjects discussed in the article but not the main point of the article

   OR

   those headings representing delimiters or limiting aspects of subjects. For example, an article on statistics for special hospitals would be indexed as HOSPITALS, SPECIAL (IM) and STATISTICS (NIM) so that in a computer search request you may retrieve only articles dealing with statistics on special hospitals and NOT ALL articles on special hospitals. Headings such as statistics used this way are called "search delimiters."

   OR

those terms which exist in MeSH as "see under" references (called "minor descriptors"). If these terms are used frequently enough by indexers they become candidates as new MeSH headings (major descriptors) for the following year.

4. Form in MEDLINE

   IM headings (print headings) are so indicated with an asterisk (*).

5. Searchability in MEDLINE

IM only:	*LIVER
	*LIVER AND *GOUT
NIM only:	LIVER AND NOT *LIVER
both IM and NIM:	LIVER
	LIVER AND GOUT

or, to express it conversely,

LIVER AND GOUT	retrieves both IM and NIM on both subjects
*LIVER AND *GOUT	retrieves only IM on both subjects
*LIVER AND GOUT	retrieves only IM for liver but both IM and NIM for gout
LIVER AND *GOUT	retrieves both IM and NIM for liver but only IM for gout

The simple examples above merely suggest that any permutation is possible. In practical searching both IM and NIM (LIVER AND GOUT) are most frequently used. More will be illustrated later in the course.

G. MEDICAL SUBJECT HEADINGS (MeSH) PUBLICATIONS:

1. Annotated Alphabetical MeSH

VIROLOGY
G1.273.540.859
SPEC: SPEC qualif CATALOG: use with form qualif instead of VIRUSES /form or VIRUS DISEASES /form
67

VIRULENCE
G4.185.515.910
NIM; only /drug eff /rad eff; coord NIM with micro-organism /pathogen (IM)
66(65)

VIRUS ACTIVATION
G4.185.515.946.940
only /drug eff /rad eff; coord with specific virus /growth (IM or NIM)
80
X PROPHAGE EXCISION
X PROPHAGE INDUCTION
X VIRUS INDUCTION

VIRUS CULTIVATION
E5.909.560.970+
NIM; only /instrum /methods; relation to TISSUE CULTURE: Manual 26.33.2
see related
TISSUE CULTURE

•VIRUS DISEASES
C2+
GEN: prefer specifics; /drug ther: consider also ANTIVIRAL AGENTS
CATALOG: form qualif = VIROLOGY /form

VIRUS INDUCTION see VIRUS ACTIVATION
G4.185.515.946.940

VIRUS INHIBITORS
D24.611.935
do not use /analogs; in normal serum, body fluids & tissues; do not confuse with INTERFERONS or VIRAL INTERFERENCE (factors produced after virus enters cell) or ANTIVIRAL AGENTS (antiviral drugs & chem); blood viricidal activity probably goes here (IM) + BLOOD /physiol (IM); DF: VIRUS INHIB
70(65)

VIRUS RECEPTORS see RECEPTORS, VIRUS
D12.776.543.955 G6.184.154.955

VIRUS REPLICATION
G4.185.515.946+ G6.184.941
only /drug eff /rad eff; not a substitute for viral growth (= specific virus /growth) but all right for viral multiplication; coord with specific virus /physiol (IM or NIM); DNA replication in viruses: coord IM with DNA REPLICATION (IM)
68
XR DNA REPLICATION

•VIRUSES
B4+
GEN: avoid: too general; do not use /cytol; /drug eff: consider also ANTIVIRAL AGENTS; do not confuse 'slow viruses' with 'latent viruses': slow cause dis with very long preclin course & very slow progression, 'latent' are non-infective but activable; presence of viruses in blood = VIREMIA: see note there; see many pre-coord VIR- terms like VIRAL PROTEINS; RNA, VIRAL, etc.; use Permuted MeSH for complete coverage; policy: Manual 22.18, 22.24+ CATALOG: form qualif = VIROLOGY /form
see related
INCLUSION BODIES, VIRAL
XR MICROBIOLOGY

VISAMMIN see KHELLIN
D18.918.543

VISCEROPTOSIS
C6.405.890
X SPLANCHNOPTOSIS

G. MEDICAL SUBJECT HEADINGS (MeSH) PUBLICATIONS: (cont.):

2. MeSH Tree Structures; Permuted MeSH.

B4 - ORGANISMS-VIRUSES

VIRUSES

●VIRUSES	B4	
BACTERIOPHAGES	B4.123	
COLIPHAGES	B4.123.205	
PHAGE LAMBDA	B4.123.205.545	
PHAGE MU 1	B4.123.205.610	
PHAGE PHI X 174	B4.123.205.690	
T-PHAGES	B4.123.205.891	
MYCOBACTERIOPHAGES	B4.123.502	
RNA PHAGES	B4.123.691	
SALMONELLA PHAGES	B4.123.706	
STAPHYLOCOCCAL PHAGES	B4.123.831	
DEFECTIVE VIRUSES	B4.265	
SATELLITE VIRUSES	B4.265.658	
ADENO-ASSOCIATED VIRUSES	B4.265.658.96	B4.909.204.
HELPER VIRUSES	B4.423	
INSECT VIRUSES	B4.525	
IRIDOVIRIDAE	B4.525.490	B4.909.204.
POLYHEDROSIS VIRUSES	B4.525.615	
PLANT VIRUSES	B4.715	
MOSAIC VIRUSES	B4.715.464	
TOBACCO MOSAIC VIRUS	B4.715.464.708	
●VERTEBRATE VIRUSES	B4.909	
ARBOVIRUSES	B4.909.80	

VIRILISM
VIRILISM

VIRILIZING
ADENOMA, VIRILIZING

VIRION
VIRION

VIROIDS
VIROIDS

VIROLOGY
VIROLOGY

VIRULENCE
VIRULENCE

VIRUS
ABELSON LEUKEMIA VIRUS see under MOUSE LEUKEMIA VIRUSES
ABNEY VIRUS see REOVIRUS TYPE 3
ACUTE LARYNGOTRACHEO-BRONCHITIS VIRUS see PARA-INFLUENZA VIRUS TYPE 2
AFRICAN HORSESICKNESS VIRUS see under REOVIRIDAE
AFRICAN SWINE FEVER VIRUS see under IRIDOVIRIDAE
AKR VIRUS see under MOUSE LEUKEMIA VIRUSES
ALEUTIAN MINK DISEASE VIRUS see under VERTEBRATE VIRUSES, UNCLASSIFIED
ALLERTON VIRUS see BOVINE ULCERATIVE MAMMILLITIS VIRUS
AMAPARI VIRUS see HEMORRHAGIC FEVER VIRUSES, AMERICAN
APEU VIRUS see under BUNYAVIRIDAE
AUJESZKY'S DISEASE VIRUS see PSEUDORABIES VIRUS
AVIAN ARTHRITIS VIRUS see under POXVIRIDAE
AVIAN ENCEPHALOMYELITIS VIRUS see under ENTEROVIRUSES
AVIAN INFECTIOUS BRONCHITIS VIRUS see under CORONAVIRIDAE

VIRUSES
B4+
see related
INCLUSION BODIES, VIRAL
XR MICROBIOLOGY

VISAMMIN see KHELLIN

VISCEROPTOSIS
C6.405.890
X SPLANCHNOPTOSIS

VISCOSITY
H1.181.529.934
see related
BLOOD VISCOSITY

VISCUM
B6.560.975
X MISTLETOE

VISION
F2.830.816.929+ G11.561.796.929+
G11.697.911+
see related
VISUAL PERCEPTION
XU PHOSPHENES
XU VISION, ENTOPTIC
XR EYE
XR OPHTHALMOLOGY
XR OPTICS
XR VISUAL PERCEPTION

VISION DISORDERS
C10.597.751.941+ C11.966+
C23.888.592.763.941+
67

VISION, ENTOPTIC see under VISION
X ENOPTIC VISION
X ENTOPTIC VISION

VISION TESTS
E1.210.933+

VISITING NURSES see COMMUNITY HEALTH NURSING

VISITORS TO PATIENTS
M1.933
78
X PATIENTS' VISITORS

VISNA-MAEDI VIRUSES
B4.909.777.449.949
78; was see under RNA VIRUSES 1975-77
X MAEDI VIRUS

VISNADIN see under BENZOPYRANS
X VISNAGAN

VISNAGAN see VISNADIN

VISUAL ACUITY
G11.697.911.610
70
see related
FORM PERCEPTION
REFRACTION, OCULAR
XR FORM PERCEPTION

I. MEDICAL SUBJECT HEADINGS (MeSH)

1. Index Medicus indexing is philosphically oriented to medicine

   - Primary emphasis is given to: organ, organism, disease, cause, treatment, technic of diagnosis or treatment
   - Secondary concepts or topics: functions, chemistry, biochemistry, paramedical

2. The orientation of MeSH, therefore, follows this basic philosophical orientation to medicine in scope, form, availability and specificity of MeSH headings.

3. MeSH for public use; MeSH for searcher/indexer; Permuted MeSH

4. Scope of MeSH

   - Well over 20,000 MeSH headings including cross references to describe the content of medical literature
   - 15 categories closely following the primary and secondary orientations above:

A. -organs and other anatomical terms

B. -organisms getting or causing disease

C. -diseases

D. -drugs & chemicals.

E. -technics of diagnosing & treating disease

F. -psychology & psychiatry

G. -biological sciences including physiology.

H. -physical sciences

I. -sociology, anthropology, education

J. -technology

K. -history & the humanities

L. -information, libraries, documentation

M. -named groups of people

N. -healthcare services & consumer groups

Z. -geographic headings

5. Form of MeSH

A. typography: large MAJOR DESCRIPTORS and MINOR DESCRIPTORS (see under refs); small Entry Terms (see refs) and all backwards (X, XU and XR) cross-references

B. tree numbers

C. (NON MESH)

D. alphabetization: seek above or below the needed term

E. inversions: TUBERCULOSIS, PULMONARY but PULMONARY EMPHYSEMA

F. alternate word derivations: brain, cerebr-, enceph-; kidney, ren-, nephr-; liver, hepat-; eye, ocul-, ophthalm-, vis-

G. interchangeable elements: meninogomyelocele/myelomeningocele; radioautography/autoradiography

H. pre-coordinated headings : containment of biohazards; infant food

6. Use

A. specialties vs organs and diseases: DERMATOLOGY vs SKIN and SKIN DISEASES

B. specific vs general : STREPTOMYCIN VS ANTIBIOTICS; STOMACH VS GASTROINTESTINAL SYSTEM

C. coordinations and pre-coordinations: Ciliary Body diseases = Ciliary Body + UVEAL DISEASES but Corneal diseases = CORNEAL DISEASES

J. Check Tags

1. Definition: A CHECK TAG (also known as an "index tag") is a term routinely assigned to an article containing concepts of potential significance to the most important special-interest groups served by Index Medicus: the clinicians, the scientists in experimental research, the NLM History of Medicine Division, and the users of recurring bibliographies (e.g., Index to Dental Literature; International Nursing Index).

2. Use: CHECK TAGS normally do not appear in Index Medicus but they are retrievable in MEDLINE to allow the searcher to achieve maximum specificity.

3. Scope

   a. The following are CHECK TAGS which are searchable in MEDLINE but which never appear in Index Medicus:

      ANIMAL

      HUMAN

      MALE

      FEMALE

      IN VITRO

      CASE REPORT

      COMPARATIVE STUDY

      UNITED STATES GOV'T SUPPORTED

      UNITED STATES GOV'T SUPPORTED, P.H.S.

HISTORICAL ARTICLE

HISTORICAL BIOGRAPHY

CURRENT BIOG-OBIT

REVIEW

ENGLISH ABSTRACT

b. The following check tags are also assigned by an indexer if these concepts are identified in the article. These concepts will appear in Index Medicus under certain circumstances (e.g., if they are the main point of the article), but normally are stored in the computer where they are available for online retrieval.

-the age of a human subject and Pregnancy

PREGNANCY

INFANT, NEWBORN (to 1 mo)

INFANT (1-23. mo.)

CHILD, PRESCHOOL (2 - 5 yr.)

CHILD (6-12)

ADOLESCENCE (13 -18 yr.)

ADULT (19 - 44 yr)

MIDDLE AGE (45 - 64 yr)

AGED (65- yr)

-the identity of any animal in an article; if not among those printed on the indexing data form as below, the heading for the animal must be typed on the data form by the indexer

CATS

CATTLE

CHICK EMBRYO

DOGS

FROGS

GUINEA PIGS

HAMSTERS

MICE

MONKEYS

RABBITS

RATS

-the date of an historical note or biography

HISTORY OF MEDICINE, ANCIENT

HISTORY OF MEDICINE, MEDIEVAL

HISTORY OF MEDICINE, MODERN

HISTORY OF MEDICINE, 15th CENTURY

HISTORY OF MEDICINE, 16th CENTURY

HISTORY OF MEDICINE, 17th CENTURY

HISTORY OF MEDICINE, 18th CENTURY

HISTORY OF MEDICINE, 19th CENTURY

HISTORY OF MEDICINE, 20th CENTURY

-geographic headings (examples only). These are never printed in Index Medicus.

Cities:

LONDON

NEW YORK CITY

TOKYO

Countries:

IRELAND

BELGIUM

JAPAN

Regions:

AFRICA, EASTERN

FAR EAST

Continents:

AFRICA

4. Manual Retrieval in Index Medicus

Since check tags are generally not printed in Index Medicus, the following suggestions for manual searching are offered:

a. Look for organs, diseases and physiological processes in persons of various ages under the organ, the disease, or the physiological process, not under the age group. An article on gout in infants is found under GOUT, not under INFANT. An article on hand injuries in the aged is found under HAND INJURIES, not under AGED.

b. Look for research in various experimental animals under the subject of the research, not under the laboratory animal. An article on arthritis induced in rats is found under ARTHRITIS, not under RATS.

c. Technics used in research or diagnosis are generally found under the topic of research (e.g., disease, substance, etc,) rather than under the technic. Exception: when the technic is the main point of the article, it will appear in Index Medicus. An article on gamma globulin in syphilis studied electrophoretically is found under GAMMA GLOBULIN subheading *analysis and SYPHILIS subheading *immunology, not under ELECTROPHORESIS nor BLOOD PROTEIN ELECTROPHORESIS. But an article on the chromatography of amino acids is found under AMINO ACIDS subheading *analysis and also under CHROMATOGRAPHY.

K. COORDINATION

1. Definition: Coordination is the linking of concepts in indexing to show the complete content of an article and textual or factual relationships.

2. Purpose: The purpose of coordination is to achieve specificity. GOUT is a single concept, as is LIVER; the LIVER in GOUT is a coordination. One does not want all aspects of gout nor all aspects of the liver: one evidently wants only the liver in relation to gout or gout in relation to the liver.

3. Coordination in MEDLARS

   A. by two or more MeSH headings

   B. by a MeSH heading with a subheading

   C. by a MeSH heading and a check tag

   D. by a pre-coordination of constantly recurring coordinations

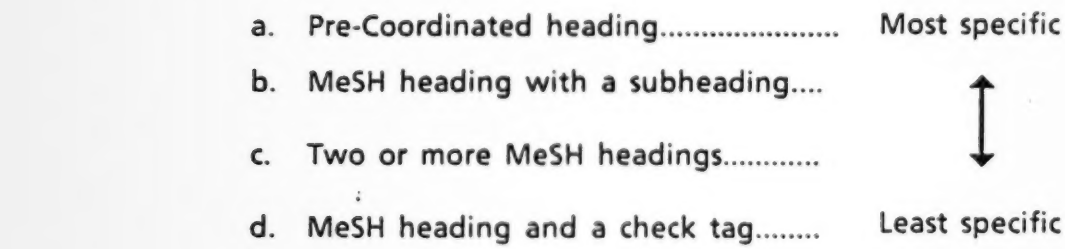
EXAMPLES:

A.	GOUT	AIR POLLUTION	LEG INJURIES
	LIVER	STATISTICS	SKIING
		NEW YORK CITY	FRACTURES, UNUNITED
		CHICAGO	

B.	HEPATITIS/pathology	FRACTURES,	SPONTANEOUS/surgery
C.	HEADACHE	RESPIRATION	NAUSEA/therapy
	CHILD	AGED	MIDDLE AGE

D	PANCREATIC DISEASES	PANCREAS + (diseases)
	STOMACH NEOPLASMS	STOMACH + (neoplasms)
	STREPTOCOCCAL INFECTIONS	STREPTOCOCCUS + INFECTION
	LIVER GLYCOGEN	LIVER + GLYCOGEN
	COMMUNICABLE DISEASE CONTROL	COMMUNICABLE DISEASES + /prevention & control
	SCHIZOPHRENIA, CHILDHOOD	SCHIZOPHRENIA + CHILD

4. Specificity of MEDLARS coordinations for either machine or manual retrieval


a. Pre-Coordinated heading.....
b. MeSH heading with a subheading....
c. Two or more MeSH headings.....
d. MeSH heading and a check tag.....
Most specific
Least specific

L. SUBHEADINGS

1. Purpose

Subheadings serve to subdivide concepts (i.e., MeSH headings) into specific aspects. Historically, subheadings have always been useful for this purpose in general, but more importantly in the case of large volumes of material - they serve to break this bulk into more workable and usable groups.

The subheadings chosen are usually those which recur very frequently in discussions of given concepts (e.g., the anatomy of organs, the effect of drugs on organisms, the toxicity of drugs, metabolism in disease).

2. Index Medicus and MEDLINE SUBHEADINGS

See Appendix C for a complete listing.

3. Use: Subheadings are assigned for use with specific categories of MeSH headings. For example, the subheading cytology is assigned with Category A (organs) and Category B (organisms) terms, but cannot be used with Category C (disease) terms. That is, one may speak of the cytology of the pancreas (PANCREAS/cytology) or the structure of a Salmonella (SALMONELLA/cytology) but one cannot consider the cytological aspects of hepatitis as HEPATITIS/cytology since HEPATITIS is a disease in Category C and cytology has not been assigned to it. Pathology would be the correct subheading to use for the heading HEPATITIS.

4. Form

A subheading appears in MEDLINE printouts of the National Library of Medicine Search System with a slash (/) connecting it to the MeSH heading with which it is paired:

LIVER/cytology HEPATITIS/pathology

In other retrieval systems different conventions are used to indicate MeSH heading /subheading combinations, e.g., BRS: Muscle - Relaxation. de.; DIALOG: Frostbite - - Drug Therapy (DT).

5. Use in MEDLINE searches

a. Any MeSH heading can be paired with any subheading as long as the combination is legal by category and is permitted by Medical Subject Headings - - Annotated Alphabetic List.

b. MeSH heading/subheading combinations may be searched with other MeSH heading/subheading combinations or in association with MeSH headings without subheadings. (NB: Form of input relates to the NLM Search System in the following examples)

-LEUCINE/BLOOD OR LEUCINE/URINE

-NOSE/INJURIES AND BOXING

-ALPHA GLOBULINS/ANALYSIS OR BETA GLOBULINS/ANALYSIS AND NOT HEPATITIS, INFECTIOUS

-AMPICILLIN/ADVERSE EFFECTS AND PREGNANCY

c. Nonsensical combinations (DIGESTION/manpower) are to be avoided even when legal by category; check the Annotated MeSH for forbidden combinations.

d. Subheadings are useful when a requester wants a specific segment of literature which is indexed in great volume (e.g., BRAIN, LIVER, ARTHRITIS, BRAIN NEOPLASMS, SCHIZOPHRENIA, AMINO ACIDS, DNA).

e. When two or more concepts are requested subheadings are generally not needed. For example, BRAIN AND ARTHRITIS AND AMINO ACIDS - three parameters - is undoubtedly specific enough without the use of subheadings.

6. Use in Manual Index Medicus Searches

a. The basic rule applies: Any MeSH heading can be paired with any subheading as long as the combination is legal by category and is permitted by MeSH. Refer again to Figure 1 for an example of the printed format.

b. Since subjects are divided routinely by indexers into more specific categories by subheading, look for specific aspects of subjects under the subject as divided by its applicable subheadings. Do not look under a heading which is the exact duplicate of the subheading. Examples: An article on radiography of the pancreas if found under PANCREAS subheading *radiography, not under RADIOGRAPHY. An article on the metabolism of glucose is found under GLUCOSE subheading *metabolism, not under METABOLSIM. An article on penicillin in the blood is found under PENICILLIN subheading *blood, not under BLOOD. An article on urinalysis in gout is found under GOUT subheading *urine, not under URINE.

c. General articles are listed first in Index Medicus under the appropriate MeSH heading before the specific articles subdivided by subheading.

M. Summary: COMPARISON OF MEDLARS PRODUCTS

Index MEDICUS publication	MEDLINE Data Base
1960 - Present	Current year and two previous years. Older citations on MEDLINE Backfiles (1966 +) (NB: online file segmentations will differ on other retrieval systems mounting MEDLINE)
2,600 + Journals	3,600 + Journals
Selected multi-authored monographs (1976 - 1982)	Selected multi-authored monographs (1976 -1982)
All languages	All languages
Priority 1, 2, 3 journals	Priority 1, 2, 3 & special list journals
IM (Print) headings only	IM & NIM (Non-Print) headings
No check tags	Check tags
Major descriptors (index terms) only	Major & minor decriptors
No geographics	Geographics
All terms spelled in full	Truncations permitted
Subheadings printed	Subheadings directly searchable
Vernacular & translated titles	Vernacular & translated titles
Titles printed	Text (title and abstract) word search available
No abstracts	Selected author abstracts since 1975

II. MEDLARS AND MEDLINE LIMITATIONS

II. MEDLARS AND MEDLINE LIMITATIONS

The following concepts can NOT at present be indexed with precision in MEDLARS.

1. Any relationship not expressed by the coordination of two or more MeSH headings, by a MeSH heading with a subheading or by a MesH heading with a check tag

2. Any degree of quality or quantity (e.g., more/less, partial/total, good/bad). Acute/chronic is sometimes expressed in pre-coordinated MeSH headings (i.e., LEUKEMIA, LYMPHOCYTIC, ACUTE and LEUKEMIA, LYMPHOCYTIC, CHRONIC)

3. Degrees of adverse effects except as the subheadings "adverse effects", "poisoning", or "toxicity"

4. Degrees of beneficial effects

5. Before or after or how far along (except as TIME FACTORS)

6. Early or late (except as TIME FACTORS)

7. Often or seldom (except as TIME FACTORS or RECURRENCE)

8. Primary or secondary, except as the subheading "secondary" which was introduced in 1980 to indicate the secondary location to which a neoplastic process has metastasized.

9. Major or minor

10. Above or below, left or right (except as LATERALITY or DOMINANCE, CEREBRAL)

11. Surgical approach (except as METHODS and the subheading surgery) e.g., appendectomy/mt or Iris/surgery and METHODS

12. Amount of therapy, i.e., dosage except as /administration & dosage e.g., cc's of Ibuprofen = IBUPROFEN/administration & dosage.

Requests in which one of these concepts is important should not be automatically rejected for MEDLINE, since the text word searching capability may enable the searcher to retrieve citations dealing with the aspects listed above. However, the requester should be cautioned that a MEDLINE search may not be entirely satisfactory. The final decision as to the suitability of a request for a MEDLINE search should always be saved for the trained computer search analyst.

III. ONLINE RETRIEVAL VERSUS MANUAL RETRIEVAL

III. ONLINE RETRIEVAL VERSUS MANUAL RETRIEVAL

You have now had the opportunity to view the two major products of the MEDLARS system, Index Medicus and MEDLINE. Since the MEDLINE database is used to print Index Medicus and other recurring bibliographies the similarities between the two products are many, but there are differences. In general, most topics can be adequately retrieved manually. When then, is a MEDLINE search suggested?

-Requests involving concepts unlikely to be printed in Index Medicus such as secondary points of the article, check tags, geographics, etc.

-Requests requiring the coordination of two or more MeSH headings to express a desired concept. This is possible manually but much more effcient online.

-Specific requests for which no specific MeSH term exists.

-Requests involving the retrieval of a large number of related terms (e.g., a request requiring retrieval of all terms related to the brain).

-Requests for comprehensive coverage of the dental and nursing literature. Possible manually only if you have the printed recurring bibliographies: Index to Dental Literature; International Nursing Index.

Can you think of other reasons?

Before moving on to topics related to the MEDLINE online data-base, put a check next to the search requests on the next page which would be most appropriately handled online and those which could be effectively handled manually. Under each request, write a brief explanation of why you chose either online or manual.

SAMPLE INFORMATION REQUESTS PRACTICUM

Instructions: Next to each search request put a check mark to indicate whether the request could be effectively handled manually or whether it is most appropriately handled online; write a brief explanation for your choice.

		Online	Manual
1.	Review articles on prostatic neoplasms.		
2.	Diagnosis and chemotherapy of leiomyosarcoma.		
3.	Occurrence of hepatitis in females.		
4.	Some general articles on interferon inducers.		
5.	Articles on vitamin C by Linus Pauling.		
6.	Effect of bran on blood lipids and calcium.		
7.	Nursing care of the diabetic.		
8.	Incidence of rat bites in New York City		

IV. PREPARATION FOR SEARCHING

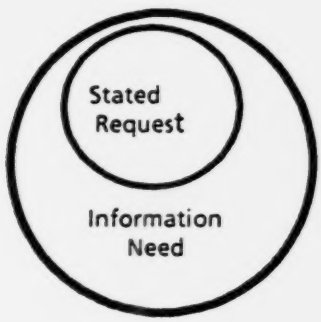
IV. PREPARATION FOR SEARCHING

A. Overview

The success of a MEDLINE or Index Medicus search is heavily dependent upon the completeness and clarity of the request. Given a request statement that inadequately represents the information needed, there is nothing that a searcher can do, except purely by chance, to produce a good search result. Time spent initially in a pre-search interview is of paramount importance in determining the context and scope of an information need as well as identifying search facets, delimiters and user expectations.

Inadequate user-searcher interaction can lead to a variety of situations producing poor search results.

1. Stated request is more specific than the actual information need:



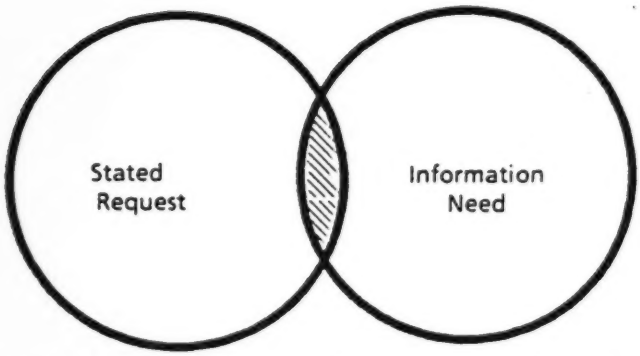
How relevant (precise) will citations retrieved be for this type of searcher/user interaction?

How comprehensive would such a search be?

2. Stated request is more general than the actual Information need;

How relevant (precise) will citations retrieved be for this type of searcher/user interaction?

How comprehensive would such a search be?



How would you rate the search result from this user/searcher interaction?

B. Search clarification: There are a number of points to remember when interviewing a requester or when reviewing a written request for submission to a MEDLINE center. Among the most important of these are:

1. Read the question or request carefully. Do you understand it? Do not hesitate to ask for clarification if necessary.

2. Is the request feasible in relation to Index Medicus or is it more appropriate for MEDLINE? What about MEDLINE capabilities? MEDLINE LIMITATIONS? Date coverage of the database? Journal coverage of the data base?

3. What does the requester mean by a definition of a term if it appears to differ from MeSH or is subject to multiple interpretations?

   For example, when the requester says "CARCINOMA' does this mean cancer in general or the histologic type carcinoma? When the requester says 'GLYCOGENOSIS,' does this mean I, II, III, etc. (glycogenosis = inborn error of metabolism resulting in an excess accumulation of polysaccharides).

4. General vs Specific: When the requester asks for a search on a general concept, does he truly want references to general articles or, is he using a general term to specify a whole class of concepts?

   If he says he wants antibiotics, does he mean ALL antibiotics in the MEDLINE database, or antibiotics not in MeSH or specific antibiotics in or out of MeSH? If he says "respiratory", does he mean the whole respiratory tract or just the lung? If "CNS", does he mean both the brain and the spinal cord (CNS = BRAIN and SPINAL CORD in MeSH) or just the brain?

   If he says "cytological", does he also include "pathological"?

   If he says "tranquilizers" does he include hypnotics and sedatives?

5. Who is the requester? What is his professional affliation? The searcher may want to tailor his search to the professional slant of

the requester. A practicing physician with a patient will probably not be interested in experimental animals, nor will a lawyer for his client. A pharmacologist working for a drug company may want both experimental and clinical studies. An engineer may want articles emphasizing equipment and instrumentation.

6. What are the requester's preferred limitations in retrieval? Does he want a broad, all-inclusive search or does he simply want a few good references?

   Does he want human and not animals? animals and not human? any specific age group? any specific sex? any specific metabolic process? a specific drug effect? a special type of adminstration? a specific technic? a definite date range? all languages or only certain ones?

C. SEARCH STRATEGY DEVELOPMENT

1. Definition: Search strategy is the manipulation of data within the computer by the searcher to retrieve citations which best answer the requester's needs.

2. Method: Since MeSH headings are entered into MEDLINE under the principles of coordination explained earlier, the MEDLINE and Index Medicus user retrieves answers to search requests through coordination of the same MeSH headings plus added searchable items as required.

3. Searchable items (access points) available for coordination:

   The following items from the unit record or citation include all elements which can be searched. They have been arranged in a more or less relative order of frequency of use in searches:

   a. MeSH headings

   b. MeSH headings/subheadings

   c. Words in the titles and abstracts (textwords)

   d. Check tags

   e. Language

   f. Publication year

   g. Geographical headings

h. Authors

i. Biographies

j. Journal title abbreviation

k. Index Medicus date

l. MeSH class number

m. ISSN

n. Special list indicator

o. MeSH place of publication class number

p. Call Number (for Monographs) between 1976 and 1982

Most MEDLINE searches will center about items a through h for these are the most productive and satisfy most requests.

Question: Which of the above are searchable items or access points in Index Medius?

Question: Which of the above are printed in Index Medicus but are not directly searchable manually?

D. LOGICAL AND POSITIONAL OPERATORS

Logical and positional operators in a retrieval system serve as the framework for establishing various logical relationships among the search terms chosen to express a users information need. The standard Boolean operators (AND, OR, NOT) require simply that search terms

appear (or don't appear) in the same online record. Positional operators specify a more precise relationship among search terms appearing in the same online record (e.g., one search term may be required to be adjacent to another search term, or in the same sentence).

LOGICAL OPERATORS

Operator	Condition
Boolean Operators	
OR	To retrieve a or b, with either a or b being acceptable
NOT	To retrieve a but not with b. Term b must not appear anywhere in the online record
AND	To retrieve a when it is with b -- both terms must be in the same document
Positional Operators*	
SAME	To retrieve a and b in the same paragraph of an online record
WITH	To retrieve a and b in the same sentence of an online record
ADJ	To retrieve a and b in the same online record immediately adjacent to one another, in the order of entry

*BRS positional operators used as examples. The NLM Online System does not have specific positional operators. These conditions are achieved at NLM through stringsearch and sentencesearch.

E. SAMPLE SEARCH

Here is a sample search showing the computer capability with regard to search statements, logic, commands, etc., as used in MEDLINE on the NLM Search System, followed by the same example executed on the BRS and DIALOG retrieval systems.

Request: Please give me some articles on the use of the Pap smear in mass screening for cervical cancer

U.S. National Library of Medicine Retrieval System

NLM TIME 13:56:40 DATE 85:101 LINE 039

WELCOME TO THE NATIONAL LIBRARY OF MEDICINE'S ELHILL RETRIEVAL SYSTEM.
YOU ARE NOW CONNECTED TO THE MEDLINE FILE

SS 1 /C?

USER:

	Comments
cervix neoplasms	medical subject heading for cervical cancer
PROG: SS (1) PSTG (1476)	
SS 2 /C? USER: vaginal smears	medical subject heading used for Pap smear
PROG: SS (2) PSTG (364)	
SS 3 /C? USER: (tw) pap or papanicolaou	text words for Pap
PROG: SS (3) PSTG (588)	
SS 4 /C? USER: 1 and 2	
PROG: SS (4) PSTG (169)	results using only medical subject headings
SS 5 /C? USER: 1 and 3	
PROG: SS (5) PSTG (68)	results using only text words
SS 6 /C? USER: 4 or 5	
PROG: SS (6) PSTG (191)	need both strategies to be comprehensive
SS 7 /C? USER:	

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6 and mass screening — adding medical subject heading for mass screening

PROG:
SS (7) PSTG (42)

SS 8 /C?
USER:
7 and eng (la) — limiting to the English language

PROG:
TIME OVFLW: CONT? (Y/N) — NLM system message - time slicing

USER:
y

PROG:
SS (8) PSTG (27)

SS 9 /C?
USER:
8 and india — adding a geographic medical subject heading

PROG:
SS (9) PSTG (1)

SS 10 /C?
USER:
prt 1 fu compr include ab

PROG:

1
AU - Garud MA ; Saraiya UB ; Lulla M ; Khan S ; Paraskar M ; Daftary D
TI - Cytology screening program in an urban and rural community in India. Review of a ten-year experience.
LA - Eng
MH - Carcinoma in Situ/*DIAGNOSIS/OCCURRENCE/THERAPY ; Cervix Neoplasms/DIAGNOSIS/OCCURRENCE/THERAPY ; Evaluation Studies ; Female ; Human ; India ; Mass Screening ; *Rural Population ; *Urban Population ; *Vaginal Smears
AB - An approach to the detection and management of early cervical cancer and its precursors utilizing basic and inexpensive equipment and a team of workers comprising physicians, cytotechnicians and social workers in an urban and rural community in India is described. In the ten-year period from 1970 to 1979, a total of 26, 217 patients had Papanicolaou smears taken; 104 patients had histologically proven carcinoma in situ or microinvasive cancer of the cervix in which the clinical findings at the time of cell study did not indicate malignancy. The policy of management based on judicial conservatism and essential radicalism have good survival rates and minimum morbidity.
SO - Acta Cytol (Baltimore) 1983 Jul - Aug; 27 (4):429-3

Bibliographic Retrieval Services Retrieval System

MESH 1979 - MAY 1985
BRS SEARCH MODE - ENTER QUERY

		Comments
1_:	cervix-neoplasms.de.	MeSH heading for cervical cancer
RESULT	4683 DOCUMENTS	
2_:	vaginal-smears.de.	MeSH heading for Pap smear
RESULT	1223 DOCUMENTS	
3_:	pap.ti,ab. or papanicolaou.ti,ab.	keywords for Pap
RESULT	1310 DOCUMENTS	
4_:	mass-screening.de.	MeSH heading for mass screening
RESULT	3657 DOCUMENTS	
5_:	1 and 2	
RESULT	602	results using only MeSH headings
6_:	1 and 3	
RESULT	186 DOCUMENTS	results using Pap keywords
7_:	5 OR 6	
RESULT	649 DOCUMENTS	combining both strategies
8_:	7 and 4	
RESULT	141 DOCUMENTS	
9_:	..l/8 lg = en	limit to English
RESULT	98 DOCUMENTS	

BRS SEARCH MODE - ENTER QUERY

10_:	9 and india.de.	limit to a geographic location
RESULT	1 DOCUMENT	

Comments

1_: cervix adj neoplasm$1 — retrieves keyword phrase and controlled vocabulary

RESULT 4683 DOCUMENTS
2_: vaginal adj smear$1

RESULT 1355 DOCUMENTS
3_: pap or papanicolaou

RESULT 1467 DOCUMENTS
4_: mass adj screen$3

RESULT 3810 DOCUMENTS
5_: 1 and 2

RESULT 605 DOCUMENTS
6_: 1 and 3

RESULT 186 DOCUMENTS
7_: 5 or 6

RESULT 651 DOCUMENTS
8_: 7 and 4

RESULT 145 DOCUMENTS
9_: ..1/8 lg = en

RESULT 101 DOCUMENTS
BRS SEARCH MODE - ENTER QUERY
10_: 9 and india

RESULT 1 DOCUMENT
11_: ..p 10 bibl, ab, mj,mn /doc = all 1 — BRS command for printing

AN 83278463. 8300.
Au Garud-M-A. Saraiya-U-B. Lulla-M. Khan-S. Paraskar-M. Daftary-D.
TI Cytology screening program in an urban and rural community in India. Review of a ten-year experience.
SO Acta-Cytol (Baltimore). 1983 Jul-Aug. 27 (4). P 429-31.
MJ CARCINOMA-IN-SITU: di. CERVIX-NEOPLASMS: oc, th. EVALUATION-STUDIES. FEMALE. HUMAN. INDIA. MASS-SCREENING.
AB An approach to the detection and management of early cervical cancer and its precursors utilizing basic and inexpensive equipment and a team of workers comprising physicians, cytotechnicains and social workers in an urban and rural community in India is described. In the ten-year period from 1970 to 1979, a total of 26,217 patients had Papanicolaou smears taken; 104 patients had histologically proven carcinoma in situ or microinvasive cancer of the cervix in which the clinical findings at the time of cell study did not indicate malignancy. The policy of management based on judicial conservatism and essential radicalism gave food survival rates and minimum morbidity. Author.

DIALOG Retrieval System

Set	Items	Description

?b 154

11apr85 14:36:08 User 001183
$0.82 0.017 Hrs File6
$0.17 Telenet
$0.98 Estimated cost this file

File 154:MEDLINE - 80-85/Apr
** FILE 154 (MEDLINE) IS AVAILABLE *
** ONLY ON DIALOG VERSION 2 *

Set	Items	Description	Comments
?ss cervix neoplasms/de			retrieval on MeSH headings
S1	4017	CERVIX NEOPLASMS/DE	
?ss vaginal smears/de			retrieval on MeSH
S2	1017	VAGINAL SMEARS/DE	
?ss pap/ti,ab or papanicolaou/ti,ab			keywords for Pap
S3	953	PAP/TI,AB	
S4	255	PAPANICOLAOU/TI,AB	
S5	1192	PAP/TI,AB OR PAPANICOLAOU/TI,AB	
?ss mass screening/de			retrieval on MeSH
S6	3012	MASS SCREENING/DE	
?ss s1 and s2			
	4017	S1	
	1017	S2	
S7	509	S1 AND S2	results with MeSH
?ss s1 and s5			
	4017	S1	
	1192	S5	
S8	170	S1 AND S 5	results with keywords
?ss s7 or s8			
	509	S7	
	170	S8	
S9	544	S7 OR S8	combining strategies
?ss s9 and s6			
544 S9			

Comments

	3012	S6
S10	124	S9 AND S6

?ss s10 not la = nonenglish — limit to English

Processing

	124	S10
S11	396393	LA = NONENGLISH
S12	86	S10 NOT LA = NONENGLISH

?ss s12 and india/de — limit to a geographic area

	86	S12
S13	3782	INDIA/DE
S14	1	S12 AND INDIA/DE

File 154:MEDLINE - 80-85/Apr
**FILE 154(MEDLINE) IS AVAILABLE *
** ONLY ON DIALOG VERSION 2 *

Set	Items	Description	Comments
?ss cervix (1w)neoplasm? ?			retrieval on keyword phrase and MeSH heading
Processing			
S1	6689	CERVIX	
S2	143504	NEOPLASM? ?	
S3	4017	CERVIX (1W) NEOPLASM? ?	
?ss vaginal (1w) smear? ?			
S4	4965	VAGINAL	
S5	2820	SMEAR? ?	
S6	1125	VAGINAL (1W) SMEAR? ?	
?ss pap or papanicolaou			keyword retrieval
S7	953	PAP	
S8	255	PAPANICOLAOU	
S9	1192	PAP OR PAPANICOLAOU	
ss mass?(1w)screen???			
S10	20805	MASS	
S11	17435	SCREEN???	
S12	3155	MASS (1W) SCREEN???	
?ss s3 and s6			
	4017	S3	
	1125	S6	
S13	512	S3 AND S6	results using general keywords and MeSH headings
?ss s3 and s9			
	4017	S3	
	1192	S9	
S14	170	S3 AND S9	keyword results
?ss s14 and s12			
	170	S14	
	3155	S12	
S15	31	S14 AND S12	
?ss s15 not la = nonenglish			limit to English
Processing			
	31	S15	
S16	396393	LA = NONENGLISH	
S17	23	S15 NOT LA = ENGLISH	
?ss s17 and india			limit to geographic location
	23	S17	
S18	4183	INDIA	

65

S19 1 S17 AND INDIA

?t 19/5/1 DIALOG command for printing 1 citation

19/5/1
1123463 83278463
Cytology screening program in an urban and rural community in India. Review of a ten-year experience.
Garud MA; Saraiya UB; Lulla M; Khan S; Paraskar M; Daftary D
Cytology Clinic (AMWI), Cama and Albless Hospital, Bombay, India.
Acta Cytol (Baltimore) (UNITED STATES) , Jul-Aug 1983, 27 (4) p429-31,
ISSN 0001-5547 Journal Code: OLI
Languages: ENGLISH
Journal Announcement: 8311
Subfile: INDEX MEDICUS

An approach to the detection and management of early cervical cancer and its precursors utilizing basic and inexpensive equipment and a team of workers comprising physicians, cytotechnicains and social workers in an urban and rural community in India is described. In the ten-year period from 1970 to 1979, a total of 26,217 patients had Papanicolaou smears taken; 104 pateints had histologically proven carcinoma in situ or microinvasive cancer of the cervix in which the clinical findings at the time of cell study did not indicate malignancy. The policy of management based on judicial conservatism and essential radicalsim gave good survival rates and minimum morbidity.

Tags: Female; Human

Descriptors: * Carcinoma in Situ--Diagnosis (DI); Carcinoma in Situ--Occurrence (OC); Carcinoma in Situ--Therapy (TH); *Cervix Neoplasms--Diagnosis (DI); Cervix Neoplasms--Occurrence (OC); Cervix Neoplasms--Therapy (TH); Evaluation Studies; India; Mass Screening; *Rural Population; *Urban Population; *Vaginal Smears

V. OTHER BIOMEDICAL DATABASES AND RETRIEVAL SYSTEMS

V. OTHER BIOMEDICAL DATABASES AND RETRIEVAL SYSTEMS

Today, health sciences libraries provide access to a variety of databases and retrieval systems. The health related databases form a small part of the information world for health professionals. Health professionals and researchers are investigating subjects which take them into disciplines other than their own. A greater variety of databases and retrieval sytems need to be tapped by the librarian in order to fulfill the dynamic information needs of the health professional and scientist.

NLM offers 18 databases through its own retrieval system and two of its databases (MEDLINE and Health Planning and Administration) through other retrieval systems (BRS and Dialog). Decisions on which database and retrieval sytem to access become an important component of the health sciences librarian's repertoire of skills. These decisions are based on knowledge of the database's content and potential use for health sciences personnel and of the retrieval system's mechanics and database load idiosyncracies.

BRS (Bibliographic Retrieval Service, Inc.) is a retrieval system which offers a full range of database subjects and types. Subjects covered include the life sciences, social sciences, and humanities. BRS also offers full-text databases like medical textbooks and medical journals, enhanced databases like Superindex, and bibliographic databases like MEDLINE.

Dialog is another major retrieval system which offers databases for a great variety of subjects covering all fields of knowledge. Widely used retrieval systems also exist for various countries like JOIC in Japan and DIMDI in West Germany.

All examples used in this section are from NLM, BRS, and Dialog. However, the principles mentioned in the following subsections are true no matter which retrieval system is used.

A. NLM FAMILY OF DATABASES

NLM offers access to a variety of databases ranging from bioethics to toxicology. The following is a brief description of some of the more heavily used databases.

CANCERLIT (Cancer Literature): contains over 300,000 references on all aspects of cancer from over 3,000 U.S. and international journals, books, reports, and meeting abstracts. This database is sponsored by the National Institutes of Health's National Cancer Institute and is useful for answering information requests such as "The use of MOPP for treating leukemia".

HEALTH (Health Planning & Administration): contains over 200,000 references from U.S. and international journals to the literature on health planning, organization, financing, management, manpower, and related subjects. This database is produced cooperatively by the NLM and the American Hospital Association and is useful for answering information requests such as "staffing patterns for a rehabilitation center".

POPLINE (Population Information Online): contains over 100,000 references from journals, monographs, newspapers, technical reports, and unpublished works to the worldwide literature on population and family planning. This database is produced cooperatively by the Population Information Program of Johns Hopkins University, the Center for Population and Family Health of Columbia University, and the Population Index, Office of Population Research at Princeton University and is useful for answering information requests such as "The use of IUDs in Japan".

TOXLINE (Toxicology Information Online): contains over 1.4 million references from journals and reports in the worldwide published literature on the pharmacological, biochemical, physiological, environmental, and toxicologiccal effects of drugs and chemicals. This databases is composed of references taken from a number of secondary sources like Chemical Abstracts and Biological Abstracts and is useful for answering information requests such as "What are the toxic effects of chrysotile asbestos?".

B. OTHER RETRIEVAL SYSTEMS' BIOMEDICAL DATABASES.

BRS currently offers the greatest variety of biomedical database types. Most health sciences librarians are familiar with the bibliographic databases like MEDLINE, Psychological Abstracts, and BIOSIS. However, BRS also offers access to enhanced databases like Superindex (contains back-of-the-book indexes to life sciences and chemistry handbooks) and full-text databases like Drug Information Fulltext (the American Hospital Formulary Service and Handbook of Injectable Drugs and New England Journal of Medicine). The following is a brief description of some of the more heavily used databases. Note that BRS labels databases with a four letter code; DIALOG refers to specific databases by number.

BIOL (BIOSIS Preview): Covers primarily worldwide journal articles, research reports, reviews, conference papers, symposia, books, and other sources in biology, medicine and interdisciplinary life sciences. This database is useful for answering information request such as "The inhibiting effects of interferon on lymphomas". BIOSIS is available on Dialog as file numbers 5, 55, 255.

CHEM (Chemical Abstracts): Covers worldwide journals, technical reports, and patents in all fields of chemistry. This database is useful in answering information requests such as "How do the binding sites of insulin react with glucose?". This database is also available on Dialog as file numbers 308, 309, 310, 311, 320; and, from other vendors including SDC, DARC/Questel and the producer, Chemical Abstracts Service through CAS Online.

EMED (Excerpta Medica): Covers worldwide journal articles, selected conference proceedings, monographs, handbooks, and dissertations in the broad field of biomedicine including human medicine, related basic biological sciences, health economics, enviromental health and pollution control, forensic science, and the literature of drugs and toxicology. This database is useful for answering information request which focus (or are likely to be published in) the non U.S. sources although U.S. sources are included. Examples of information requests include: 1) "What are the therapeutic uses for Hypersin or bethanidine sulphate, a Japanese drug?"; and, 2) "What health effects have resulted from droughts in Ethiopia?". This database is also available on Dialog as file numbers, 72, 73, 172.

NAHL (Cumulative Index to Nursing and Allied Health Literature): Covers all major English-language nursing and selected allied health journals and U.S. state and national nursing association publications since 1983. This database is useful for answering information requests such as "What information is there on developing nursing care plans for AIDS patients?". This database is also available on Dialog as file number 218.

PSYC (Psychological Abstracts) from the American Psychological Association): Covers primarily English language journal articles, technical reports dissertations, conference reports, monographs in psychology and pharmacology, physiology, and linguistics. This database is useful in answering information requests such as "What are the characterisitcs of a child abuser?". This database is available in Dialog as file numbers 11, 140.

SUPE (Superindex): Covers back-of-the-book index entries and page references to professional-level reference books published by over 20 prominent scientific, medical, and engineering publishers (e.g., Elsevier and CRC Press). This database is useful for answering information requests such as "What is the normal range for epinephrine in adult males?".

C. CHOOSING THE APPROPRIATE DATABASE

How does a health sciences librarian choose an appropriate database to search when faced with such a multitude of databases? The following criteria are suggested as guides and do not replace the health sciences librarian's subject expertise and familiarity with database content.

1) Subject of the request. Is the subject clinically or basic research oriented? Does the requester wish the drug's pharmacodynamics or the drug's therapeutic use?

2) Timeliness. What is the publication date time lag of material in the database?

3) Scope. What publication type is required? Does the requester want a list of journal articles, books, audiovisuals?

4) Characteristic indexing and/or access points. Is the database most effectively searched using a thesaurus (e.g., MEDLINE using MeSH) or natural language - free-text terms (e.g., TOXLINE using words from the title or abstract fields)? What are the indexing policies used for the database (e.g., cancer indexing policies for MEDLINE)? Are nomenclature standards used like the International Union of Pure and Applied Chemistry for Chemical Abstracts and Biological Abstracts?

5) Costs of searching the database. Are there prime and nonprime time charges (e.g., MEDLINE)? Are there separate print charges for online and offline?

6) Type of requester. Is the requester of the computer search a physician or nurse?

7) Review section IV,. B. Preparation for Searching. Search Clarification for specific questions relating to MEDLINE.

D. CHOOSING AN APPROPRIATE RETRIEVAL SYSTEM

A number of databases (e.g., MEDLINE, Psychological Abstracts, and BIOSIS) are available through two or more retrieval systems. Deciding which retrieval system to use will depend on the importance placed on the answers to the following criteria.

1) Costs of searching the database
   a) Are there different rates if you search during certain times of the day?
   b) What are the citations print charges for online vs. offline?

2) Database load idiosyncracies
   a) How many files must you search to cover all years available in the database?
   b) What are the editing policies for the retrieval systems? For example, how are hyphens greek letters like alpha, and numeric subscripts or

superscripts searched or how does the retrieval system segment multi-syllable words like hydrophobic?

c) What fields of the database are included in the basic index?

d) What fields are added to the database to enhance searching efficiency (e.g.; Dialog adds the IR field to databases for chemical substances like CHEMNAME)?

3) Retrieval system mechanics

a) What print or display formats are used? With BRS and NLM you can tailor a print to include any field or choose the preformatted option to print; Dialog allows only preformatted print and display options.

b) What type of proximity operators are used? BRS and Dialog offer a range of connectors which allow phrase searching specificity while NLM has limited options.

c) What special features exist for the retrieval system? BRS, Dialog, and NLM offer procedures for sort, save, and truncation; each has unique elements for each procedure.

Decision points for choosing a retrieval system for MEDLINE:

1) Costs of searching MEDLINE

a) NLM has nonprime and prime time rates for searching. BRS and Dialog have special subscription rates if you guarantee to search a certain number of hours per year. NLM charges by the number of characters sent for online printing and by the number of pages for offline printing. BRS and Dialog have per citations charges for online and offline printing. The online charges are more expensive.

2) MEDLINE load idiosyncracies

a) NLM has MEDLINE in 6 files; BRS 4 files; and Dialog 3 files.

b) NLM omits hyphens as part of search terms except in the following phrase examples: u-560, LD-50, skf-467, and 2,4-D. BRS and Dialog keep hyphens. Greek letters are spelled out in English for BRS and Dialog and ignored in NLM.

c) NLM emphasizes medical subject headings for subject searching through a system default in the basic index while BRS and Dialog use

natural language terms and medical subject headings appearing in the basic indexes.

d) BRS separates the medical subject headings into two fields: one for major concepts like IM headings (BRS mneumonic is mj.) and the other for peripheral or minor concepts like NIM headings (BRS mneumonic is mn.). Dialog adds suffix fields like check tags or prefix fields like RN for the CAS registry number.

3) Retrieval system mechanics for MEDLINE

a) NLM print options include standard bibliographic, standard bibliographic plus abstracts, etc. and specific fields such as titles only. BRS print options are similar to NLM. Dialog offers only preformatted options.

b) NLM offers stringsearch (TS) or sentencesearch (SENS). BRS offers adj, with, same while Dialgo uses (w), (f), and (l).

c) NLM offers offsearch while BRS offers searchoff; Dialog does not offer any offline processing of database backfiles.

NLM's publications may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. (Please do not send orders to the National Library of Medicine.) Remittance should accompany orders, and, unless otherwise specified, foreign orders should include an additional 25% of the domestic price to cover mailing. To avoid delays, send a separate order for each title requested, and include full title, price, and GPO catalog number.

Index Medicus: Published monthly as a bibliographic listing of references to current articles from approximately 2,600 of the world's biomedical journals. Included are subject and author sections and a separate Bibliography of Medical Reviews. *Medical Subject Headings* is included as Part 2 of the January issue. Annual subscription (1985): $161.00 ($201.25 foreign); single issues $23.00 ($28.75 foreign). GPO Subscription Code: *IM*

Medical Subject Headings, 1985. Published as Part 2 of the January *Index Medicus.* The subject headings in the 1985 *MeSH* are arranged alphabetically, with cross references and in categorized lists. (Included with subscription to Index Medicus, also available separately for $9.50 ($11.90 foreign). *S/N 017-052-72278-6*

Cumulated Index Medicus, 1984, Volume 25: A cumulation in fourteen volumes of the approximately 240,000 citations appearing in *Index Medicus* in 1984. Included are author and subject sections, Medical Subject Headings, List of Journals Indexed, and Bibliography of Medical Reviews. Price: $168.00 ($210.00 foreign), *S/N 017-052-00249-0.* 1983: $172.00 ($215.00 foreign), *S/N 017-052-00240-6;* 1982: $260.00 ($325.00 foreign), *S/N 017-052-00232-5;* 1980 and 1981: OUT OF PRINT; 1979: $175.00 ($218.75 foreign), *S/N 017-052-00204-0;* 1978: OUT OF PRINT; 1977: $220.00 ($275.00 foreign), *S/N 017-052-00184-1;* 1976: $220.00 ($275.00 foreign), *S/N 017-052-00173-6;* 1975: $210.00 ($262.50 foreign), *S/N 017-052-00164-7.*

Abridged Index Medicus: A monthly bibliography, based on articles from 117 English-language journals, designed for the individual practitioner and libraries of small hospitals and clinics. Annual subscription: $43.00 ($53.75 foreign); single issues $5.50 ($6.88 foreign). GPO Subscription Code: *ABIM.*

Cumulated Abridged Index Medicus, 1984, Volume 15. A cumulation in one volume of the citations appearing in the monthly *Abridged Index Medicus* in 1983. Contains subject and author sections. Price: $30.00 ($37.50 foreign) *S/N 017-052-00252-0;* 1983: $28.00 ($35.00 foreign) *S/N 017-052-00244-9;* 1977: $29.00 ($36.25 foreign) *S/N 017-052-00188-4;* 1970 through 1976, and 1978 through 1981 are out of print.

List of Journals Indexed in Index Medicus, 1984. Contains four listings of journals indexed: title, abbreviations, subject, and geographical. Price: $7.00 ($8.75 foreign). *S/N 017-052-00245-7.*

Bibliography of Medical Reviews, 1971-1975 & 1976-1980 are out of print.

NLM Current Catalog: A bibliographic listing of citations to publications catalogued by the Library. Issued in two forms: (a) quarterly (non-cumulating, subject and name sections), (b) annual cumulation (subject and name sections). Prices: (a) 4 three-month cumulations (quarterlies)—$26.00 ($32.50 foreign), single issues $9.50 ($11.88 foreign)—GPO Subscription Code: NLCQ; (b) annual cumulation (1983) $29.00 ($36.25 foreign) *S/N 017-052-00246-5;* (1977) $31.00 ($38.75 foreign) *S/N 017-052-00190-6;* (1978) OUT OF PRINT; (1979) $55.00 ($68.75 foreign) *S/N 017-052-00211-2;* (1980) OUT OF PRINT; (1981) $30.00 ($37.50 foreign) *S/N 017-052-00230-9;* (1982) $45.00 ($56.25 foreign), *S/N 017-052-00238-4.*

National Library of Medicine Current Catalog, 1976-1980: Quinquennial. Available in microfiche only. Price: $21.00 ($26.25 foreign). *S/N 017-052-00238-4.*

Index of National Library of Medicine Serial Titles, 5th Edition, 1984. Provides a key-word-out-of-contex (KWOC) index to approximately 41,500 serial titles received by NLM. Price: $57.00 ($71.25 foreign). *S/N 017-052-00248-1.*

A Short Title Catalogue of Eighteenth Century Books Printed in the National Library of Medicine, 1979: Casebound, 501 pages, 1979. Lists approximately 25,000 items printed from 1701-1800 which are held in the History of Medicine Division collection of the National Library of Medicine. Price: $13.00 ($16.25 foreign).

Bibliography of History of Medicine, No. 10, 1970-1974: (includes Nos. 6-9) Price: $24.00 ($30.00 foreign). *S/N 017-052-00171-0*

Bibliography of the History of Medicine, No. 15, 1975-1979: (includes Nos. 11-14) Price: $22.00 ($27.50 foreign) *S/N 017-052-00216-3*

Bibliography of History of Medicine, No. 16, 1980: OUT OF PRINT.

Bibliography of the History of Medicine, No. 17, 1981: Price $7.50 ($9.40 foreign). *S/N 017-052-00235-0*

Bibliography of the History of Medicine, No. 18, 1982: A bibliographic listing of citations dealing with the history of medicine and its related sciences and professions. Price: $7.50 ($9.40 foreign). *S/N 017-052-00243-1*

Bibliography of the History of Medicine, No. 19, 1983: Price: $7.50 ($9.40 foreign). *S/N 017-052-00247-3*

Health Sciences Audiovisuals. A computer-output-microform (COM) version of NLM's AVLINE database produced on 48X microfiche. Contains citations to all audiovisuals catalogued by NLM since 1975, except cataloging-in-publication (CIP) titles and titles which have been withdrawn from NLM's collection. Annual subscription: $34.00 ($42.50 foreign). Single copy: $13.00 ($16.25 foreign).

National Library of Medicine Classification: A Scheme for the Shelf Arrangement of Books in the Field of Medicine and Its Related Sciences. Fourth Edition (1978) Revised 1981. Price: $16.00 ($20.00 foreign). *S/N 017-052-00222-8*

Highlight in Medicolegal Relations: An annotated chronology of important events in legal medicine. 1976. Price: $12.00 ($15.00 foreign). *S/N 017-052-00170-1*

National Library of Medicine AVLINE Catalog (1975-1976): A listing, by subject, of references to some 2,400 audiovisual instructional materials in the health sciences as cataloged by NLM for its AVLINE (Audiovisuals On-Line) data base, 1977. Price: $10.00 ($12.00 foreign). *S/N 017-052-00183-3*

NLM Audiovisuals Catalog (quarterly): Contains subject, name/title, and procurement source sections for audiovisual instructional materials cataloged ny NLM. Subscriptions include 3 quarterlies plus annual cumulation (issued in lieu of 4th quarterly). Price (1985): $24.00 ($30.00 foreign). GPO Subscription Code: *MAC*

NLM Audiovisuals Catalog, 1984 Annual Cumulation: Issued as part of the *NLM Audiovisuals Catalog* (quarterly); see below. This casebound annual cumulation is also available separately. (NOTE: When ordering include words "4th quarterly, 1984.") Price: $16.00 ($20.00 foreign) *S/N 717-017-00001-3;* (1983) $16.00 ($20.00 foreign) *S/N 017-052-72187-9;* (1977) $15.00 ($18.75 foreign) *S/N 017-052-00192-2;* (1978) through (1982) OUT OF PRINT.

Health Sciences Serials: Published quarterly in microfiche only. Each issue contains information on some 41,500 serials in NLM's SERLINE data base; many records include locator information for 120 libraries in the U.S. Annual subscription: $15.00 ($18.75 foreign); single issue $4.75 ($5.95 foreign). GPO Subscription Code: *HHS*

Centenary of Index Medicus: 1879-1979. A collection of essays by noted scholars; originally presented at the National Library of Medicine on the occasion of the 100th anniversary of the publication of *Index Medicus.* Price: $8.00 ($10.00 foreign). *S/N 017-052-00212-1*

A Review of the U.S. Role in International Biomedical Research and Communications: International Health and Foreign Policy, By Mary E. Corning. 1980. Price: $9.00 ($11.25 foreign). *S/N 017-052-00203-1*

A History of the National Library of Medicine: The Nation's Treasury of Medical Knowledge, by Wyndham D. Miles, Ph.D. 1982. A comprehensive, illustrated history of NLM from its beginnings in the early 19th century through its development as an international biomedical information center. Casebound, 531 pages. Price: $14.00 ($17.50 foreign). *S/N 017-052-00224-4*

LITERATURE SEARCH REQUEST

[Institution Name/Address]

Name:_____ Date of Request:_____

Mailing Address:_____ Date Needed: _____

City:_____ Phone:_____

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LIST OF MEDLARS SUBHEADINGS

The following is an alphabetic list of the subheadings used in indexing with their search abbreviations and the categories or subcategories with which they may be used. () gives the date of entry of the subheading into MEDLARS since 1966. For dates pertaining to the availability of a subheading for a given category or subcategory, see the listings of subheadings by category.

Subheading	Form for Indexing	Form for Searching	Allowable Categories
(66)abnormalities	abnorm	AB	A(except A10-12,A16)
(66)administration & dosage	admin	AD	D
(66)adverse effects	adv eff	AE	D,E,F4,G3,H,J
(75)analogs & derivatives	analogs	AA	D(except D8)
(67)analysis	anal	AN	A,B(except B2),C4,D, G3,J
(66)anatomy & histology	anat	AH	A,B1,B2,B5,B6
(68)antagonists & inhibitors	antag	AI	D
(66)biosynthesis	biosyn	BI	D
(67)blood	blood	BL	B2,C,D,F3
(66)blood supply	blood supply	BS	A(except A7,A11,A12), C4
(67)cerebrospinal fluid	csf	CF	B2,C,D,F3
(68)chemical synthesis	chem syn	CS	D
(67)chemically induced	chem ind	CI	C,F3
(66)classification	class	CL	A11,B-N
(66)complications	compl	CO	C,F3
(66)congenital	congen	CN	C(except C16)
(67)cytology	cytol	CY	A,B
(75)deficiency	defic	DF	D
(66)diagnosis	diag	DI	C,F3
(67)diagnostic use	diag use	DU	D,H
(75)diet therapy	diet ther	DH	C,F3
(66)drug effects	drug eff	DE	A,B(except B2),F1,F2, G4-11
(66)drug therapy	drug ther	DT	C,F3
(78)economics	econ	EC	C,E,F3,F4,G1-3,I2,J,L, N2-4
(67)education	educ	ED	E,F,G1-3,H-M,N1,N2
(66)embryology	embryol	EM	A(except A11,A12,A16), B1,B2,B6,C
(66)enzymology	enzymol	EN	A,B(except B2),C,F3
(75)ethnology	ethnol	EH	Z
(66)etiology	etiol	ET	C,F3
(66)familial & genetic	familial	FG	C,F3
(78)genetics	genet	GE	B,D6,D8-13,D24
(66)growth & development	growth	GD	A(except A10-12,A16),B
(66)history	hist	HI	C-F,G1-3,H-N
(66)immunology	immunol	IM	A-D,F3
(66)injuries	inj	IN	A(except A10-12,A16)
(66)innervation	innerv	IR	A(except A8,A10-12)

Subheading	Form for Indexing	Form for Searching	Allowable Categories
(66)instrumentation	instrum	IS	E(except E7),F2,F4, G1-3,H,J,L
(66)isolation & purification	isol	IP	B1,B3-5,D
(78)legislation & jurisprudence	legis	LJ	I,I2,L,N2-4
(68)manpower	man	MA	E6,F4,G1,G2,H-J,L,N2-4
(66)metabolism	metab	ME	A-D,F3
(75)methods	methods	MT	E(except E7),F4, G1-3, H-J,L,N
(67)microbiology	microbiol	MI	A,B1,B2,B6,C,F3
(67)mortality	mortal	MO	C,E,F3,F4
(66)nursing	nurs	NU	C,E,F3
(66)occurrence	occur	OC	C,F3
(78)organization & administration	organ	OG	I2,L,N2-4
(75)parasitology	parasitol	PS	A,B1,B2,B6,C,F3
(66)pathogenicity	pathogen	PY	B1,B3-5
(66)pathology	pathol	PA	A,C,F3
(66)pharmacodynamics	pharm	PD	D
(66)physiology	physiol	PH	A,B,D,F1,F2
(66)physiopathology	physiopathol	PP	A,C,F3
(66)poisoning	pois	PO	D,J
(66)prevention & control	prev	PC	C,F1,F3,G3,I1
(78)psychology	psychol	PX	C,F3,E(except E7),M
(66)radiation effects	rad eff	RE	A,B,D,F1,F2,G4-12,J
(67)radiography	radiogr	RA	A,C
(78)radionuclide imaging	radionuclide	RI	A,C
(66)radiotherapy	radiother	RT	C
(67)rehabilitation	rehabil	RH	C,E4,F3
(80)secondary	second	SC	C4
(68)secretion	secret	SE	A,C4,D
(68)standards	stand	ST	D,E,F4,G1-3,H-J,L,N
(68)supply & distribution	supply	SD	D,E,F4,H-J,L,N2-4
(66)surgery	surg	SU	A,B2,C,F3
(66)therapeutic use	ther use	TU	D,H
(66)therapy	ther	TH	C,F3
(66)toxicity	tox	TO	D,J
(75)transmission	transm	TM	C
(66)transplantation	transpl	TR	A
(78)trends	trends	TD	E,F4,G1-3,I,L,N
(75)ultrastructure	ultrastruct	UL	A(except A12),B,C4
(67)urine	urine	UR	B2,C,D,F3
(68)utilization	util	UT	E,G1-3,H-J,L,N
(66)veterinary	vet	VE	C(except C22),E

APPENDIX D
NLM ONLINE DATABASES

NLM TECHNICAL BULLETIN - JAN 85

DATABASE	TOTAL RECORDS	DATES COVERED	DATE LAST UPDATED	LATEST UPDATE TAG
AVLINE	13,088	THROUGH 1985	10 JAN 85	
BIOETHICS	17,502	JAN 73-DEC 84	10 DEC 84	8412(EM)
CANCERLIT	432,518	JAN 63-DEC 84	10 DEC 84	8412(EM)
CANCERPROJ	21,117	1978-1981	12 NOV 81	8110(EM)
CATLINE	585,983	THROUGH 1985	10 JAN 85	
CHEMLINE	619,369		24 DEC 84	8412(EM)
CLINPROT	4,689		31 DEC 84	8412(EM)
DIRLINE	14,049		16 AUG 84	
EXPRESS	7,175	SEP 84-DEC 84	10 DEC 84	8412(EM)
HEALTH	299,478	JAN 75-FEB 85	15 JAN 85	8502(EM)
HISTLINE	64,649		07 JAN 85	8501(EM)
MEDLINE	488,507	JAN 83-FEB 85	07 JAN 85	8502(EM)
MED80	804,874	JAN 80-DEC 82	10 DEC 84	
MED77	775,167	JAN 77-DEC 79	10 DEC 84	
MED75	642,710	JAN 75-DEC 76	10 DEC 84	
MED71	883,906	JAN 71-DEC 74	10 DEC 84	
MED66	954,650	JAN 66-DEC 70	10 DEC 84	
MESH VOC	52,619	1985	14 JAN 85	
NAME AUTH	170,134		07 JAN 85	
PDQ	972		24 DEC 84	8411(EM)
POPLINE	128,208	1970-DEC 84	24 DEC 84	8412(EM)
RTECS	70,029	THROUGH JUL 84	12 SEP 84	
SDILINE	23,227	FEB 85	07 JAN 85	8502(EM)
SERLINE	53,368	1984	18 DEC 85	
TDB	4,112		06 SEP 84	
TOXLINE	508,794		17 DEC 84	8412(EM)
CBAC	294,232	1981-VOL 101(10,11)		
TOXBIB	109,604	1981-JAN 85		
IPA (ASHP)	24,842	1981-VOL 21 (21,22,23)		
HEEP	41,880	1981-VOL 14(1)		
PESTAB	1,536	1981		
EMIC	8,899	1981-DEC 1984		
ETIC	5,937	1981-APR 1984		
TD3	13,980	1981-GRA&I 84 (18-21)		
HMTC	563			
ILO	2,843	NOV 1984		
RPROJ/CRISP	4,518	FISCAL YEAR 1983		
TOXBACK76	555,808		27 AUG 84	
CBAC	298,383	1976-1980		
TOXBIB	106,643	1976-1980		
IPA(ASHP)	33,321	1976-1980		
HEEP	63,796	1976-1980		
PESTAB	14,757	1976-1980		
EMIC	17,267	1976-1980		
ETIC	11,970	1976-1980		
TD3	9,671	1976-1980		
TOXBACK65	598,424		27 AUG 84	
CBAC	287,992	1965-1975		
TOXBIB	155,387	1965-1975		
IPA(ASHP)	33,876	1969-1975		
HEEP	54,075	1970-1975		
HAPAB/PESTAB	18,416	1968-1975		
EMIC	19,554	1950-1975		
ETIC	13,694	1950-1975		
TD3	839	PRE-1965-1975		
HAYES	10,039	1940-1968		
TMIC	4,552	1940-1975		

FOREIGN MEDLARS / MEDLINE CENTERS

Australia	MEDLARS Center National Library of Australia Canberra ACT, New South Wales 2600 Australia
Canada	MEDLARS Center Canada Institute for Scientific and Technical Information National Research Council of Canada Bldg. M-55, Montreal Road Ottawa, Ontario K1A 0S2 Canada
Colombia	MEDLARS Center Fundacion OFA Carrera 7, No. 29-34 Piso 3 Bogota, D.E., Colombia
England	The U.K. MEDLARS Service The British Library, Lending Division Boston Spa, Wetherby Yorkshire, United Kingdom LS23 7BQ
France	INSERM MEDLARS Centre du Documentation Centre Hospitalier de Bicetre 78 rue du General Le Clerc 94260 Le Gremlin Bicetre Paris, France
Germany	MEDLARS Center DIMDI (Deutsches Institut für medizinische Dokumentation und Information) 5 Koln 41, Postfach 420580, Germany West
Italy	Instituto Superiore di Sanita Viale Regina Elena 299 00161 Roma, Italy
Japan	MEDLARS Center The Japan Information Center of Science and Technology C.P.O. Box 1478 Tokyo, Japan
Kuwait	Kuwait University P.O.B. 17140 Kuwait
Mexico	Centro Nacional de Informacion y Documentacion en Salud Escuela de Salud Publica de Mexico Mexico 12, D.F. Rio Mixcoac 36-9° Piso Mexico 12, D.F.
South Africa	Institute for Medical Literature South African Medical Research Council P.O. Box 70 Tygerberg 7505, South Africa
Sweden	Medical Information Centre (MIC) Karolinska Institutet Fack S-104 01 Stockholm 60 Sweden
Switzerland	DOKDI CH3012 Bern Waldheimstrasse 20 Switzerland
PAHO	Biblioteca Regional de Medicina Organizacao Pan-Americana de Saude 04023 Rua Botucatu, 862 Caixa Postal 20.381 Vila Clementino, Sao Paulo, Brazil

APENDIX F

NATIONAL LIBRARY OF MEDICINE LITERATURE SEARCHES

Literature Searches (MEDLARS produced, individualized bibliographies, deemed to be of wide interest) are available from NLM without charge. Literature Searches published in 1980 through 1984 are listed below. A complete list of titles appears each month in *INDEX MEDICUS* and *ABRIDGED INDEX MEDICUS*. Single copies of the bibliographies listed below may be obtained by writing to: LITERATURE SEARCH PROGRAM, Reference Section, National Library of Medicine, 8600 Rockville Pike, Bethesda, Maryland 20209. The name and address of the requestor, typed on a gummed label, must accompany the request (no return postage necessary).

80-1 PASSIVE SMOKING
January 1972 through Sept 1980
162 citations

80-2 SPINAL CORD INJURIES THERAPY AND REHABILITATION
January 1977 through Oct 1980
251 citations

80-3 ELEMENTAL DIET
January 1975 through Oct 1980
170 citations

80-4 CARDIOPULMONARY RESUSCITATION (CPR)
January 1977 through Oct 1980
112 citations

80-5 DRUGS AND THE ELDERLY
January 1977 through Oct 1980
287 citations

80-6 PSORIASIS THERAPY
January 1977 through Oct 1980
299 citations in English

80-7 REYE'S SYNDROME
January 1975 through Oct 1980
194 citations

80-8 VINYL CHLORIDE TOXICOLOGY
January 1977 through Oct 1980
245 citations

80-9 BENZENE TOXICOLOGY
January 1977 through Sept 1980
164 citations

80-10 AMANTADINE AND INFLUENZA
January 1975 through Oct 1980
114 citations

80-11 NURSE PRACTITIONERS AND PHYSICIANS' ASSISTANTS
January 1977 through Oct 1980
193 citations

80-12 SURGERY AND THE ELDERLY
January 1977 through Dec 1980
273 citations

80-13 ADVERSE EFFECTS OF INTRAUTERINE DEVICES
January 1975 through Dec 1980
314 citations in English

80-14 INBORN ERRORS OF METABOLISM IN ANIMALS
January 1977 through Dec 1980
352 citations

80-15 MALARIA IMMUNOLOGY
January 1977 through
368 citations

80-16 EMERGENCY CARE FOR BURN PATIENTS
January 1975 through Dec 1980
124 citations

80-17 CANINE PARVOVIRUS (CPV)
January 1978 through Dec 1980
44 citations

80-18 SELF-CARE
January 1978 through Dec 1980
113 citations

80-19 HLA INCIDENCE IN DISEASE
January 1979 through Dec 1980
386 citations in English

80-20 SEXUAL STERILIZATION OF THE MENTALLY RETARDED
January 1975 through Dec 1980
52 citations

80-21 PLASMIDS AS VECTORS OF ANTIBIOTIC RESISTANCE
January 1978 through Dec 1980
214 citations

80-22 LYMPHOCYTE HYBRIDOMAS AND THEIR PRODUCTS
January 1978 through Dec 1980
301 citations

80-23 CHILD ABUSE
January 1976 through Dec 1980
463 citations in English

80-24 LEGIONNAIRES' DISEASE
January 1978 through Dec 1980
389 citations

80-25 THE AGING BRAIN
January 1979 through Dec 1980
494 citations

80-26 TOXICOLOGY OF POLYCHLORINATED BIPHENYL COMPOUNDS
January 1975 through Dec 1980
517 citations

80-27 BENDECTIN AND DEBENDOX
January 1966 through Dec 1980
17 citations

80-28 DIET AND CANCER: ETIOLOGY AND PREVENTION
January 1978 through Dec 1980
371 citations

80-29 REIMPLANTATION
January 1978 through Dec 1980
190 citations

80-30 AGENT ORANGE
January 1972 through Dec 1980
99 citations

80-31 THERAPEUTIC USE OF DIMETHYL SULFOXIDE
January 1975 through Dec 1980
155 citations

80-32 TOXICOLOGY OF POLYBROMINATED BIPHENYL COMPOUNDS
January 1977 through Dec 1980
124 citations

81-1 OCCUPATIONAL NEUROBEHAVIORAL TOXICOLOGY
January 1975 through March 1981
282 citations

81-2 GENETIC SCREENING AND COUNSELING
January 1977 through Dec 1980
455 citations

81-3 INFANT BOTULISM
January 1977 through June 1981
65 citations

(Continued on next page)

81-4 TOXIC SHOCK SYNDROME
January 1979 through June 1981
65 citations

81-5 PERCUTANEOUS TRANSLUMINAL ANGIOPLASTY
January 1979 through July 1981
145 citations

81-6 SUDDEN INFANT DEATH SYNDROME
January 1976 through August 1981
395 citations

81-7 LEAD EXPOSURE IN CHILDREN
January 1977 through July 1981
354 citations

81-8 FOREIGN MEDICAL GRADUATES IN THE UNITED STATES
August 1979 through August 1981
100 citations

81-9 TRAVELER'S DIARRHEA
January 1975 through August 1981
157 citations

81-10 THE IMPAIRED PHYSICIAN, INCLUDING OCCUPATIONAL RISKS
January 1977 through June 1981
175 citations

81-11 ADVERSE EFFECTS OF COSMETICS
January 1977 through Aug 1981
284 citations

81-12 PSYCHOLOGY OF AGING AND THE ELDERLY
January 1979 through Sept 1981
475 citations in English

81-13 PSYCHIATRY AND THE ELDERLY
January 1979 through Aug 1981
477 citations

81-14 NUTRITION AND THE ELDERLY
January 1977 through August 1981
302 citations

81-15 PHOTOTHERAPY FOR NEONATAL JAUNDICE
January 1977 through Sept 1981
146 citations

81-16 MALE REPRODUCTIVE TOXICOLOGY
January 1977 through August 1981
230 citations

81-17 ROTAVIRUS INFECTIONS IN INFANTS AND CHILDREN
January 1977 through August 1981
248 citations

81-18 PSYCHOLOGIC ASPECTS OF CANCER
January 1978 through July 1981
424 citations in English

81-19 EPIDERMOLYSIS BULLOSA
January 1975 through Sept 1981
218 citations

81-20 COMPUTED TOMOGRAPHIC SCANNING OF THE BRAIN
January 1978 through September 1981
660 citations in English

81-21 THE AGING HEART
January 1979 through Sept 1981
267 citations

81-22 ADVERSE REACTIONS TO RADIOGRAPHIC CONTRAST MEDIA
January 1979 through Oct 1981
339 citations

81-23 ADVERSE EFFECTS OF SELENIUM
January 1977 through Sept 1981
106 citations

81-24 CHROMIUM TOXICOLOGY
January 1977 through Sept 1981
250 citations

81-25 ARSENIC TOXICOLOGY
January 1977 through Oct 1981
354 citations

81-26 NEUROPEPTIDES
January 1980 through mid-1981 publications
504 citations

81-27 AUDIOVISUAL AIDS, COMPUTER ASSISTED INSTRUCTION, AND PROGRAMMED INSTRUCTION IN EDUCATION FOR THE HEALTH PROFESSIONS
January 1978 through October 1981
391 citations

81-28 THE NATIONAL LIBRARY OF MEDICINE
August 1978 through December 1981
185 citations

81-29 DIET AND HYPERACTIVITY
January 1975 through December 1981
148 citations

82-1 NURSING DIAGNOSIS
January 1977 through May 1982
156 citations in English

82-2 BRAIN DEATH CRITERIA
January 1977 through April 1982
177 citations

82-3 JUVENILE RHEUMATOID ARTHRITIS
January 1977 through May 1982
295 citations in English

82-4 HEALTH EFFECTS OF NUCLEAR RADIATION
January 1979 through May 1982
427 citations

82-5 MEDICINE AND HEALTH IN CHINA
January 1979 through May 1982
447 citations in English

82-6 ASBESTOS TOXICOLOGY
August 1977 through May 1982
597 citations

82-7 DIAGNOSIS-RELATED PATIENT CLASSIFICATION
January 1975 through April 1982
170 citations from the Health Planning and Administration database

82-8 AQUATIC TOXICOLOGY OF METALS AND METALLIC COMPOUNDS
January 1975 through May 1982
236 citations

82-9 INHALATION INJURY
January 1977 through June 1982
133 citations

82-10 ZINC TOXICOLOGY
January 1977 through July 1982
204 citations

82-11 FORMALDEHYDE TOXICOLOGY
January 1977 through June 1982
213 citations

82-12 OUTCOME FOR INTENSIVE CARE UNIT PATIENTS
January 1980 through July 1982
113 citations

(Continued on next page)

LITERATURE SEARCHES

82-13 HEALTH NEEDS AND SERVICES FOR HISPANIC AMERICANS
January 1980 through July 1982
96 citations

82-14 INFORMED CONSENT
July 1977 through July 1982
394 citations in English

82-15 CISPLATIN
January 1980 through July 1982
255 citations

82-16 FAILURE TO THRIVE
August 1977 through July 1982
184 citations

82-17 TOTAL HIP REPLACEMENT
January 1979 through August 1982
173 citations in English

82-18 DRUGS AND PHARMACY IN DEVELOPING COUNTRIES
January 1977 through August 1982
172 citations

82-19 DRUG THERAPY FOR LEPROSY PATIENTS
January 1980 through August 1982
135 citations

82-20 DIAGNOSTIC ULTRASOUND IN PREGNANCY
January 1977 through Aug 1982
388 citations in English

82-21 AUDIOVISUAL AIDS, COMPUTER ASSISTED INSTRUCTION, AND PROGRAMMED INSTRUCTION IN PATIENT EDUCATION
January 1977 through Sept 1982
336 citations in English from Medline and Health Planning and Administration databases

82-22 FOOD AND DRUG INTERACTION
January 1979 through Sept 1982
116 citations and addendum

82-23 SIMULATION IN EDUCATION AND ASSESSMENT FOR THE HEALTH PROFESSIONS
January 1975 through Sept 1982
213 citations in English

82-24 TOXIC SHOCK SYNDROME
January 1979 through Dec 1982
255 citations

82-25 ORAL REHYDRATION THERAPY
Janury 1980 through Dec 1982
104 citations

82-26 ESOPHAGEAL REFLUX
January 1979 through Dec 1982
295 citations in English

82-27 POSITRON EMITTED TOMOGRAPHY
Janury 1980 through Dec 1982
286 citations

82-28 NON-INSULIN-DEPENDENT (TYPE 2) DIABETES
January 1980 through Dec 1982
191 citations

82-29 TARDIVE DYSKINESIA
January 1980 through Dec 1982
222 citations

82-30 DEINSTITUTIONALIZATION
January 1982 through December 1982
245 citations in English

83-1 ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)
January 1980 through April 1983
179 citations, including addendum

83-2 COCHLEAR IMPLANTS
January 1980 through March 1983
114 citations

83-3 KEPONE (CHLORDECONE) TOXICOLOGY
January 1977 through March 1983
90 citations and addendum

83-4 GENETIC FACTORS IN ALCOHOLISM
January 1977 through June 1983
231 citations

83-5 ACQUIRED IMMUNUNODEFICIENCY SYNDROME (AIDS)
Update and Supplement
May 1983 through August 1983
215 citations, including addendum

83-6 CLINICAL APPLICATION OF BIOMATERIALS
January 1982 through July 1983
352 citations in English

83-7 NUCLEAR MAGNETIC RESONANCE IMAGING
January 1980 through August 1983
191 citations

83-8 RANITIDINE
January 1980 through July 1983
249 citations

83-9 LIVER TRANSPLANTATION
January 1977 through July 1983
256 citations

83-10 LYME DISEASE
January 1977 through August 1983
70 citations

83-11 INTRAUTERINE GROWTH RETARDATION (IUGR)
January 1978 through August 1983
417 citations in English

83-12 SLEEP APNEA
January 1980 through August 1983
323 citations

83-13 HYPERTRIGLYCERIDEMIA
January 1980 through September 1983
144 citations in English

83-14 LOW BIRTH WEIGHT INFANT-OUTCOME, MORTALITY, INTENSIVE CARE
January 1977 through September 1983
374 citations

83-15 ANOREXIA NERVOSA AND BULIMIA
January 1980 through August 1983
326 citations in English, including Appendix

83-16 PORTABLE INFUSION PUMPS
January 1980 through August 1983
148 citations

83-17 HOSPITAL INFORMATION SYSTEMS
January 1975 through September 1983
319 citations in English from the Health Planning and Administration database

83-18 PRECURSORS TO MALIGNANT MELANOMA--- DYSPLASTIC OR CONGENITAL NEVI
101 citations
January 1977 through October 1983

(Continued on next page)

LITERATURE SEARCHES

83-19 DIOXIN TOXICOLOGY (INCLUDING AGENT ORANGE)
January 1981 through September 1983
128 citations

83-20 MENTAL DISORDERS AND VIOLENT CRIMES PSYCHIATRIC AND LEGAL ASPECTS
January 1980 through August 1983
124 citations including appendix

83-21 INSOMNIA: CORRELATES AND TREATMENT CONSIDERATIONS
January 1977 through November 1983
424 citations in English

83-22 MATERNAL ALCOHOL CONSUMPTION AND FETAL AND NEWBORN EFFECTS, INCLUDING THE FETAL ALCOHOL SYNDROME (FAS)
May 1978 through October 1983
304 citations in English

83-23 HEALTH CARE COST CONTAINMENT
January 1975 through October 1983
349 citations in English from the Health Planning and Administration database

83-24 DENTAL SEALANTS
January 1977 through November 1983
199 citations in English

83-25 ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)
Second quarterly update and supplement
September 1983 through December 1983
344 citations, including addendum

83-26 CYCLOSPORIN
January 1980 through December 1983
301 citations in English

83-27 HEPATITIS B VACCINE
January 1980 through December 1983
246 citations

83-28 ETHYLENE DIBROMIDE TOXICOLOGY
January 1977 through December 1983
94 citations

83-29 NURSING DIAGNOSIS
June 1982 through December 1983
100 citations and appendix

83-30 VITAMINS AS ANTICARCINOGENS
January 1977 through December 1983
191 citations

83-31 DEXAMETHASONE SUPPRESSION TEST IN PSYCHIATRY, ESPECIALLY DEPRESSION
January 1980 through December 1983
261 citations

83-32 PSYCHOLOGICAL STRESS RELATED TO THE ETIOLOGY OF CARDIOVASCULAR DISEASE
January 1980 through December 1983
151 citations

83-33 IN VITRO FERTILIZATION
January 1979 through December 1983
276 citations

83-34 INDOOR AIR POLLUTION
January 1980 through December 1983
184 citations

83-35 THE HOMELESS
January 1980 through December 1983
93 citations

84-1 DIAGNOSTIC ULTRASOUND IN PREGNANCY
September 1982 through January 1984
204 citations in English, the Scandinavian languages, and German

84-2 ANALGESIC ASSOCIATED KIDNEY DISEASE
January 1977 through February 1984
360 citations

84-3 OSTEOPOROSIS
January 1980 through March 1984
355 citations in English

84-4 HOSPICES
June 1979 through February 1984
431 citations from the Health Planning and Administration database

84-5 ALZHEIMER'S DISEASE
January 1983 through February 1984
317 citations

84-6 BONE MARROW TRANSPLANTATION IN LEUKEMIA AND SOLID TUMORS
January 1980 through March 1984
303 citations in English

84-7 DRGs AND PROSPECTIVE PRICING
May 1982 through March 1984
354 citations from the Health Planning and Administration database

84-8 RECURRENT MOOD DISORDERS
January 1981 through April 1984
118 citations

84-9 ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)
Third quarterly update and supplement
January 1984 through April 1984
387 citations, including addendum

84-10 FETAL SURGERY
January 1980 through April 1984
93 citations

84-11 PREMENSTRUAL SYNDROME
January 1982 through May 1984
155 citations

84-12 ADOLESCENT ALCOHOLISM
January 1980 through May 1984
136 citations

84-13 POSTTRAUMATIC STRESS DISORDER
January 1982 through June 1984
105 citations

84-14 THE KERATINOCYTE
January 1980 through June 1984
115 citations

84-15 ADOLESCENT PARENTHOOD
January 1980 through June 1984
129 citations

84-16 BUTYLATED HYDROXYANISOLE (BHA) OR BUTYLATED HYDROXYTOLUENE (BHT)
January 1977 through May 1984
145 citations

84-17 NEONATAL INTRAVENTRICULAR HEMORRHAGE
January 1982 through June 1984
134 citations

APPENDIX G

INTERLIBRARY LOAN FACT SHEET

Most of the literature in the collection of the National Library of Medicine is available for loan to any library, with the exception of indexes and abstracts, general library and information science material, current trade publications for which the presumption of widespread availability is reasonable, and technical reports available from the National Technical Information Service. The Library will lend only items that fall within the scope and coverage policy governing its collection. Requests for reprints should be directed to the author.

Readers who cannot obtain medical literature in their Regions and who cannot come to the National Library of Medicine in person may secure material through the interlibrary loan service by applying through their local library. Loans are not made directly to individuals. Libraries should send requests directly to NLM only for those titles not held in their Regions. Regional holdings lists should be checked to determine locations. Regional Medical Libraries and their participating Resource Libraries which are unable to fill requests will forward them to NLM.

Loans requested from NLM must comply with the following regulations and the instructions and with the provisions of the National Interlibrary Loan Code of the American Library Association. Policies regarding fees for service are established by the NLM Director.

FORMS OF LOANS

- Material will be lent in the original form, as a photocopy, or in microfilm. The form will be determined by NLM.
- Photocopies will not exceed fifty pages in most cases.
- Literature from the History of Medicine collection (printed before 1871) is usually loaned in the form of microfilm or photoduplicate.
- Selected videocassette titles are available from the Audiovisual Resources Section, Reference Services Division (see Fact Sheet, "Videocassette Loan Service"). Also see mailing address listed on next page.
- Journals and monographic serials generally do not circulate. Most monographic works will be lent in the original form. Certain forms and types of material (atlases, congresses) and specific works may be withheld from circulation.

METHOD OF BORROWING

- Requests will be accepted in only three forms: (1) teletypewriter, (2) other approved forms of electronic transmission, or (3) typed in triplicate on ALA Interlibrary Loan Request forms.
- Requests for material to be photocopied must include (as applicable) a statement of conformance to the Copyright Law (CCL) or Copyright Guidelines (CCG) (but not both). To facilitate processing, NLM prefers that requests for original loans also carry the statement.
- Requests must include the signature of the authorizing person at the borrowing library (if the form is sent by mail) or, if sent by teletype, the authorizing person's name.
- Each item or item segment must be requested on a separate form.
- Requests that do not comply with all of the above will not be accepted.

INTERLIBRARY LOAN REQUESTS

- Citations should be complete.
- Periodical references should include name of journal, date of issue, volume and number, author, title and full pagination of article.
- References to books should include full name of author, title, edition, place, publisher, and date of publication.
- Omission of any of these citation elements could result in rejection of the request.
- Citations verified in NLM publications or NLM databases must include NLM call numbers when available or requests will be subject to rejection. The call number is 02NLM in the online databases and recent printed catalogs and 04NLM or DNLM in book catalogs printed before January 1983.
- State the specific database name containing the citation. Do not state "MEDLINE" if the citation was found, for example, in TOXLINE or CANCERLINE.
- Give source of verification whenever possible. If bibliographic resources have been exhausted, a notation to that effect and summary of sources searched should be furnished. Requests not verified or which do not contain the notation and summary of sources searched will receive limited searching while verified requests will be searched more thoroughly.
- If a reference cannot be verified, give the bibliographic citation to its source.

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- Original material and microfilm must be returned by the due date.
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- Libraries with overdue volumes may have their borrowing privileges suspended.
- An original volume lent by NLM may be recalled at any time.

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- The National Library of Medicine will pay postage for outgoing loans.
- The borrowing library:
  - will pay postage for the return of borrowed materials,
  - is responsible for material from time of receipt until returned to and received at NLM
- will replace materials lost or irreparably damaged. If material is not available, a standard $75 fee will be charged.
- For protection of the borrowing library it is suggested that materials be insured or registered and that a return receipt be requested.
- Address all returns to the Circulation and Control Section.
- Pack materials properly for return. Protect corners and edges of books well and mail unbound materials flat.

REQUESTS FROM FOREIGN COUNTRIES

- Interlibrary loan service of photocopies of journal articles will be provided under the same conditions and regulations as for U.S. libraries except for the difference in fee charged (see CHARGES).
- Materials in the original form and microfilms will not be loaned outside the U.S.

CHARGES

- Effective October 1, 1983:

  U.S. libraries—$5.00 for each filled interlibrary loan in the form of a photocopy or loan of a book, videocassette, or microfilm.
  Foreign libraries—$7.00 (U.S.) for each filled interlibrary loan in the form of a photocopy.
  Fees include charges for handling and postage. Requestors are urged to establish deposit accounts with the National Technical Information Service (NTIS) 5285 Port Royal Road, Springfield, Virginia, 22161. Invoices are issued quarterly.

SPECIAL PHOTOGRAPHIC SERVICES

- Photographs or slides of portraits, halftones, photographs, prints, charts and other pictorial work: Special procedures are required. Write for cost estimate.
- Purchase of microfilm or other photocopy of books from the historical collection needed for extensive research: Address requests to Chief, History of Medicine Division. It is not possible to fill large orders for purposes of building collections.
- Orders requiring copyright owner's permission will not be accepted unless accompanied by this permission in writing.

TITLES IN NLM ONLINE FILES NOT IN THE NLM COLLECTION

- POPLINE, HEALTH and several "Special List" indexes (e.g., dental and nursing) include some serials that are not in the NLM collection. SERLINE indicates these titles by: (1) a note that they are not in the NLM collection, and (2) the indexing source rather than the call number in the Call Number (CA) field.
- Do not send requests for these non-NLM titles to NLM. They will not be forwarded to "Special List" indexing sources, but will be returned to the requesting library.
- If item is not available through the RML Network, you may wish to contact the source directly for their loan and photocopy policy.

INTERLIBRARY LOAN INFORMATION

Address requests as follows:

(1) For journal and monograph material published after 1870:

CIRCULATION AND
CONTROL SECTION (Telephone: (301) 496-5511)
National Library of
Medicine TWX 710-824-9615
8600 Rockville Pike TELEX (301) 492-1817
Bethesda, Maryland 20209

(2) For journal and monograph material published before 1871:

HISTORY OF MEDICINE
DIVISION (Telephone: (301) 496-5405)
National Library of
Medicine TWX 710-824-9615
8600 Rockville Pike TELEX (301) 492-1817
Bethesda, Maryland 20209

(3) For videocassettes:

AUDIOVISUAL RESOURCES
SECTION (Telephone: (301) 496-4244
National Library of
Medicine TWX 710-824-9615
8600 Rockville Pike TELEX (301) 492-1817
Bethesda, Maryland 20209